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Contents

Federal Register
Vol. 52, No. 136
Thursday, July 16, 1987

Agricultural Marketing Service
PROPOSED RULES
Dates (domestic) produced or packed in California, 26688
Raisins produced from grapes grown in California, 26689

Agriculture Department
See Agricultural Marketing Service; Commodity Credit Corporation

Arts and Humanities, National Foundation
See National Foundation on the Arts and the Humanities

Coast Guard
RULES
Drawbridge operations:
 Florida, 26676
Ports and waterways safety and regattas and marine parades:
 Safety and security zones, etc.; list of temporary rules, 26675
Regattas and marine parades:
 New Jersey Offshore Grand Prix, 26673
PROPOSED RULES
Ports and waterways safety:
 James River, VA; security zone, 26703

Commerce Department
See International Trade Administration; National Bureau of Standards; National Oceanic and Atmospheric Administration

Committee for the Implementation of Textile Agreements
NOTICES
Export visa requirements; certification, waivers, etc.:
 Macau, 26719

Commodity Credit Corporation
NOTICES
Loan and purchase programs:
 Feed grains, 26707

Defense Department
PROPOSED RULES
Program Fraud Civil Remedies Act; implementation, 26692, 26693
 (2 documents)
NOTICES
Meetings:
 Science Board task forces, 26720

Education Department
See also National Council on the Handicapped
RULES
Elementary and secondary education:
 Drug-free schools and communities—
  Hawaiian natives program, 26918
  Regional centers program, 26922
NOTICES
Agency information collection activities under OMB review, 26720

Energy Department
See Federal Energy Regulatory Commission

Executive Office of the President
See Management and Budget Office

Family Support Administration
NOTICES
Grants:
 Low income home energy assistance program; stripper well settlement funds use, 26742

Federal Aviation Administration
RULES
Airworthiness directives:
 Bell, 26663
 Boeing, 26664
 DeHavilland, 26665

Federal Communications Commission
RULES
Common carrier services:
 Small telephone companies; administrative and regulatory burden reduction, 26681
Radio and television broadcasting:
 Equal employment opportunity practices and reporting requirements, 26683
PROPOSED RULES
Common carrier services:
 Public land mobile services—
  Flexible allocations of frequencies for paging and other services, 26704
 Reporting and recordkeeping requirements, 26704

Federal Election Commission
NOTICES
Meetings; Sunshine Act, 26762

Federal Emergency Management Agency
RULES
Flood insurance; communities eligible for sale:
 New York et al., 26679
NOTICES
Agency information collection activities under OMB review, 26736

Federal Energy Regulatory Commission
NOTICES
Hydroelectric applications, 26731
Small power production and cogeneration facilities; qualifying status:
 Trafalgar Power, Inc., et al., 26721
Applications, hearings, determinations, etc.:
 El Paso Natural Gas Co., 26722
 Fina Oil & Chemical Co. et al., 26722
 Helmerich & Payne, Inc., 26723
 Howell Gas Management Co., 26723
 Missouri Public Service, 26730
 Pacific Power & Light Co., 26724
 Salmon Resources Ltd., 26724
 Transcontinental Gas Pipe Line Corp. et al., 26724
 United Gas Pipe Line Co., 26730
 Vermont Yankee Nuclear Power Corp., 26731

Federal Maritime Commission

NOTICES
Agreements; additional information requests:
San Francisco Port Commission Agreement, 26736
Agreements filed, etc., 26736

Federal Reserve System

NOTICES
Privacy Act; systems of records, 26737
Applications, hearings, determinations, etc.:
Allegheny Valley Bancorp, Inc., et al., 26739
First Independent Investment Group, Inc., 26739
Gaskill, Charles S., et al., 26739

Federal Trade Commission

NOTICES
Meetings; Sunshine Act, 26762

Fish and Wildlife Service

NOTICES
National recreational fisheries policy development coordination; notice of intent, 26752

Food and Drug Administration

RULES
Food additives:
Adjuvants, production aids, and sanitizers—
Poly [(6-[(1,1,3,3,-tetramethylbutyl)amino)-s-tiazine-2,4-diyl][(2,2,6,6,-tetramethyl-4-piperidyl)imino]hexamethylene-[(2,2,6,6-tetramethyl-4-piperidyl)imino]]; correction, 26764
Polymers—
Nylon resins, 26666
PROPOSED RULES
Food for human consumption:
Fruit or vegetable juice beverages other than orange juice, diluted; revocation of common or usual names for nonstandardized food, 26690
Soda water; identity standard
Correction, 26764
GRAS or prior-sanctioned ingredients:
Caffeine in nonalcoholic carbonated beverages
Correction, 26764
NOTICES
Food additive petitions:
Pilot Chemical Co.; correction, 26764
Procter & Gamble Co.; correction, 26764
Sun Chemical Corp., 26740
Human drugs:
Export applications—
Leucovorin calcium for injection; correction, 26764
Meetings:
Advisory committees, panels, etc., 26740, 26741
(3 documents)

Health and Human Services Department

See Family Support Administration; Food and Drug Administration; National Institutes of Health; Public Health Service

Health Resources and Services Administration

See Public Health Service

Indian Affairs Bureau

NOTICES
Irrigation projects; operation and maintenance charges:
San Carlos Irrigation Project, AZ, 26748
Partition Agreement between the Cherokee Nation of Oklahoma and the Kaw, Otoe-Missouria, Pawnee, Ponca, and Tonkawa Indian Tribes of Oklahoma, 26747

Interior Department

See Fish and Wildlife Service; Indian Affairs Bureau; Land Management Bureau; Minerals Management Service; National Park Service

Internal Revenue Service

RULES
Income taxes:
Residential energy credit; energy grants and financing; information returns, 26667

International Development Cooperation Agency

See Overseas Private Investment Corporation

International Trade Administration

NOTICES
Antidumping:
Animal glue and inedible gelatin from West Germany, 26711
Fabric expanded neoprene laminate from Japan, 26712
Ferrite cores (of type used in consumer electronic products) from Japan, 26714

International Trade Commission

NOTICES
Import investigations:
Light iron construction castings from Brazil, 26754

Interstate Commerce Commission

NOTICES
Motor carriers:
American Movers Conference; settlement of disputes involving loss and damage claims on interstate shipments of household goods, 26755

Labor Department

See Occupational Safety and Health Administration

Land Management Bureau

NOTICES
Agency information collection activities under OMB review, 26749
Closure of public lands:
Colorado, 26749
Environmental statements; availability, etc.:
Mt. Ellen/Blue Hills wilderness study areas, UT; correction, 26750
Meetings:
Grand Junction District Grazing Advisory Board, 26752
Helicopters and motorized vehicle use in gathering wild horses and burros, 26750
Prineville District Grazing Advisory Board, 26750
Realty actions; sales, leases, etc.:
Idaho, 26750
Utah, 26751
Wisconsin; correction, 26751
Survey plat filings:
California, 26751
(2 documents)

Management and Budget Office

NOTICES
Budget rescissions and deferrals
Cumulative reports, 26906

Minerals Management Service
NOTICES
Agency information collection activities under OMB review, 26753
Outer Continental Shelf; development operations coordination:
  Hall-Houston Oil Co., 26752
  Tenneco Oil Exploration & Production, 26753

National Aeronautics and Space Administration
PROPOSED RULES
Acquisition regulations, 26705

National Bureau of Standards
NOTICES
Information processing standards, Federal:
  Intelligent peripheral interface and small computer system interface, 26715

National Council on the Handicapped
NOTICES
Meetings; Sunshine Act, 26762

National Foundation on the Arts and the Humanities
NOTICES
Meetings:
  Humanities Panel, 26757

National Highway Traffic Safety Administration
NOTICES
Motor vehicle safety standards; exemption petitions, etc.:
  Aston Martin Lagonda Ltd., 26760

National Institutes of Health
NOTICES
Meetings:
  National Cancer Institute, 26743 (2 documents)
  National Center for Nursing Research, 26743, 26744 (2 documents)
  National Institute of Allergy and Infectious Diseases, 26744

National Oceanic and Atmospheric Administration
RULES
Confidentiality of statistics, 26685
NOTICES
Permits:
  Marine mammals; correction, 26764

National Park Service
NOTICES
Boundary establishment, descriptions, etc.:
  Delaware Water Gap National Recreation Area, NJ and PA, 26753

Nuclear Regulatory Commission
NOTICES
Applications, hearings, determinations, etc.:
  Joshi, Kedarnath B., M.D., et al., 26759
  Public Service Co. of New Hampshire et al., 26759

Occupational Safety and Health Administration
PROPOSED RULES
Health and safety standards, etc.
  Methylenedianiline (MDA) Mediated Rulemaking Advisory Committee recommendations, 26776

Office of Management and Budget
See Management and Budget Office

Overseas Private Investment Corporation
NOTICES
Meetings; Sunshine Act, 26762

Pennsylvania Avenue Development Corporation
NOTICES
Freedom of Information Act; implementation:
  Uniform fee schedule and administrative guidelines, 26677

Public Health Service
See also Food and Drug Administration; National Institutes of Health
NOTICES
Privacy Act; systems of records, 26744

Research and Special Programs Administration
PROPOSED RULES
Hazardous materials:
  Alternative routes for radioactive materials transportation; State designations, 26932
  Radioactive materials transportation; notification of route plans, 26928

Textile Agreements Implementation Committee
See Committee for the Implementation of Textile Agreements

Transportation Department
See also Coast Guard; Federal Aviation Administration; National Highway Traffic Safety Administration; Research and Special Programs Administration
NOTICES
Aviation proceedings:
  Hearings, etc.—
    Air Nevada Airlines, Inc., 26760
    U.S.-Venezuela route proceeding, 26760

Treasury Department
See Internal Revenue Service

Separate Parts In This Issue

Part II
Department of Labor, Occupational Safety and Health Administration, 26776

Part III
Office of Management and Budget, 26906

Part IV
Department of Education, 26918

Part V
Department of Education, 26922

Part VI
Department of Transportation, Research and Special Programs Administration, 26928

Part VII
Department of Transportation, Research and Special Programs Administration, 26932

Reader Aids
Additional information, including a list of public laws, telephone numbers, and finding aids, appears in the Reader Aids section at the end of this issue.

CFR PARTS AFFECTED IN THIS ISSUE

A cumulative list of the parts affected this month can be found in the Reader Aids section at the end of this issue.

7 CFR
Proposed Rules:
987.......................... 26688
989.......................... 26689

14 CFR
39 (3 documents)........... 26663–26665

21 CFR
177.......................... 26666
178.......................... 26764
Proposed Rules:
102.......................... 26690
103.......................... 26764
165.......................... 26764
181.......................... 26764

26 CFR
1.......................... 26667
601.......................... 26667
602.......................... 26667

29 CFR
Proposed Rules:
1910.......................... 26776
1926.......................... 26776

32 CFR
Proposed Rules:
276.......................... 26692
277.......................... 26693

33 CFR
100 (2 documents).......... 26673, 26675
117.......................... 26676
165.......................... 26675
Proposed Rules:
165.......................... 26703

34 CFR
230.......................... 26918
235.......................... 26922

36 CFR
902.......................... 26677

44 CFR
64.......................... 26679

47 CFR
1.......................... 26681
61.......................... 26681
69.......................... 26681
73.......................... 26683
Proposed Rules:
22.......................... 26704
43.......................... 26704

48 CFR
Proposed Rules:
1805.......................... 26705
1815.......................... 26705
1870.......................... 26705

49 CFR
Proposed Rules:
173.......................... 26932
177 (2 documents).......... 26928, 26932

50 CFR
603.......................... 26685
605.......................... 26685

Rules and Regulations

Federal Register
Vol. 52, No. 136
Thursday, July 16, 1987

This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 86-ASW-37; Amdt. 39-5672]

Airworthiness Directives; Bell Helicopter Textron, Inc. (BHTI) Model 206L-1 and 206L-3 Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) which requires a one-time inspection and replacement, if necessary, of the horizontal stabilizer assembly on Bell Helicopter Textron, Inc., Model 206L–1 and 206L–3 helicopters. There may be as many as 15 defective horizontal stabilizers installed on operating helicopters. The AD is needed to preclude operation of helicopters with damaged horizontal stabilizers which could result in failure of the horizontal stabilizer and loss of the helicopter.

DATES: *Effective Date:* August 6, 1987. Compliance: As prescribed in body of AD.

ADDRESSES: The applicable service information may be obtained from Bell Helicopter Textron, Inc., P.O. Box 482, Fort Worth, Texas 76101.

A copy of the Operation Safety Notice is contained in the Rules Docket, Office of the Regional Counsel, FAA, Southwest Region, 4400 Blue Mound Road, Fort Worth, Texas.

FOR FURTHER INFORMATION CONTACT: Gary B. Roach, Helicopter Certification Branch, ASW–170, Aircraft Certification Division, Federal Aviation Administration, Southwest Region, Fort Worth, Texas 76193–0170, telephone No. (817) 624–5179.

SUPPLEMENTARY INFORMATION: There has been a report of the installation of a horizontal stabilizer, previously rejected during the manufacturing process, on a BHTI Model 206L–1 helicopter. This horizontal stabilizer was one of 15 rejected during the manufacturing process due to bonding discrepancies. These horizontal stabilizers were impacted with a ball peen hammer by Bell Helicopter on October 28, 1982, to insure they would not be confused with airworthy parts. The horizontal stabilizer skin was cracked and the honeycomb core was crushed. These destroyed horizontal stabilizers were sold as scrap material. However, the reported horizontal stabilizer was repaired by an unknown source using and unapproved method, given the appearance of an airworthy part, and installed on an operating helicopter.

Since this condition is likely to exist or develop on other helicopters of the same type design, an AD is being issued which requires inspection and replacement (if necessary) of the horizontal stabilizer on BHTI Model 206L–1 and 206L–3 helicopters.

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and public procedure hereon are impractical and good cause exists for making this amendment effective in less than 30 days.

The FAA has determined that this regulation is an emergency regulation that is not considered to be major under Executive Order 12291. It is impracticable for the agency to follow the procedures of Order 12291 with respect to this rule since the rule must be issued immediately to correct an unsafe condition in aircraft. It has been further determined that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). If this action is subsequently determined to involve a significant/major regulation, a final regulatory evaluation or analysis, as appropriate, will be prepared and placed in the regulatory docket (otherwise, an evaluation or analysis is not required). A copy of it, when filed, may be obtained by contacting the person identified under the caption "**FOR FURTHER INFORMATION CONTACT.**"

List of Subjects 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendent

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends § 39.13 of Part 39 of the FAR as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421, and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97–449, January 12, 1983).

§ 39.13 [Amended]

2. By adding the following new AD:

Bell Helicopter Textron, Inc: Applies to Model 206L–1 and 206L–3 helicopters, certificated in any category, with stabilizer assembly, Part Number (P/N) 206–023–119–151, installed.

Compliance is required as indicated (unless already accomplished).

To prevent abnormal flying qualities and possible failure of the stabilizer assembly, accomplish the following:

(a) Within the next 25 hours' time in service after the effective date of this AD, inspect the stabilizer assembly P/N 206–023–119–151 and determine if one of the following Serial Numbers (S/N) is installed: AO–0265, AO–069, AO–02075, AO–02080, AO–02084, AO–02095, AO–02097, AO–02126, AO–02132, AO–02136, AO–02144, AO–02149 AO–02150 AO–02166, AO–10644. If one of these stabilizers/assemblies is installed, replace prior to further flight.

Note.—Typically the P/N and S/N are located in the concave portion of the trailing edge of the stabilizer assembly (fixed portion) forward of the elevator assembly (movable portion).

(b) Alternative inspections, modifications, or other actions which provide an equivalent method of compliance may be used when approved by the Manager, Helicopter Certification Branch, Southwest Region, Federal Aviation Administration, Fort Worth, Texas 76193–0170.

This amendment becomes effective August 6, 1987.

Issued in Fort Worth, Texas, on July 7, 1987.

Don P. Watson,

Acting Director, Southwest Region.

[FR Doc. 87–16080 Filed 7–15–87; 8:45 am]

BILLING CODE 4910–13–M

14 CFR Part 39

[Docket No. 87-NM-22-AD; Amdt. 39-5675]

Airworthiness Directives; Boeing Models 727 and 737 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment revises an existing airworthiness directive (AD), applicable to certain Boeing Models 727 and 737 series airplanes, which currently requires either incorporation of an electrical ground fault protection system or replacement of the hydraulic pumps with new or upgraded hydraulic pumps. This action reinstates the visual inspection and pressure checks of the case drain system required by a previous version of this AD. This action is necessary to prevent the potential for fire caused by a burn-through failure of a pump in the presence of flammable liquids.

EFFECTIVE DATE: August 21, 1987.

ADDRESSES: The applicable service information may be obtained from the Boeing Commercial Airplane Company, P.O. Box 3707, Seattle, Washington 98124. This information may be examined at FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or the Seattle Aircraft Certification Office, 9010 East Marginal Way South, Seattle, Washington.

FOR FURTHER INFORMATION CONTACT: Mr. Alvin Habbestad, Systems and Equipment Branch, ANM-130S, Seattle Aircraft Certification Office; telephone (206) 431-1942. Mailing address: FAA, Northwest Mountain Region, 17900 Pacific Highway South, C-68966, Seattle, Washington 98168.

SUPPLEMENTARY INFORMATION: A proposal to amend Part 39 of the Federal Aviation Regulations to revise AD 87-02-05, Amendment 39-5501 (51 FR 47209; December 31, 1986), to require fuel case drain inspections on Boeing Models 727 and 737 series airplanes, was published in the **Federal Register** on March 30, 1987 (52 FR 10113).

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

The Air Transport Association (ATA) of America, on behalf of its members, advised that all members who responded to an inquiry concerning this NPRM were continuing to reinspect at 1,000 hour intervals as was required by the previous version of the AD. ATA requested that paragraph A. be revised to give credit for inspections previously accomplished within that interval, i.e., "Within the next 300 hours time in service after the effective date of this AD, unless accomplished within the last 700 hours, and thereafter at intervals not to exceed 1,000 hours". The FAA agrees that this change clarifies the intent and has revised the final rule accordingly.

The ATA stated that the proposed inspections were the same as those required by AD 76-22-08, which was superseded by AD 87-02-05, and that it would save operators from revising paperwork if the FAA reinstated AD 76-22-08. As an alternate to reinstating AD 76-22-08, ATA requested that the proposal be revised to state that inspections accomplished in accordance with the requirement of AD 76-22-08 satisfy the requirements of AD 87-02-05. The FAA does not concur with the commenter's request. In that AD 76-22-08 has been superseded, it no longer exists and cannot be reinstated. With regard to continued reference to the superseded AD, FAA maintenance regulations require recording of the current status of applicable AD's; the commenter's request therefore, conflicts with those requirements.

The ATA has also stated that, in paragraphs A. and B., the terms "hours" should be changed to "hours time in service." The FAA agrees that this was the intent, and has revised the final rule accordingly.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with changes previously noted.

It is estimated that 186 Model 727 and 94 Model 737 airplanes of U.S. registry will be affected by this AD; that it will take approximately 5 manhours per Model 727 series airplane, and 1 manhour per Model 737 series airplane to accomplish the required actions; and that the average labor cost will be $40 per manhour. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $39,200 for Model 727 series airplanes and $3,760 for Model 737 series airplanes.

For the reasons discussed above, the FAA has determined that this regulation is not considered to be major under Executive Order 12291 or significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and it is further certified under the criteria of the Regulatory Flexibility Act that this rule will not have a significant economic effect on a substantial number of small entities, because few, if any, Boeing Models 727 and 737 airplanes are operated by small entities. A final evaluation has been prepared for this regulation and has been placed in the docket.

List of Subjects in 14 CFR Part 39

Aviation safety, Aircraft.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends § 39.13 of Part 39 of the Federal Aviation Regulations (14 CFR 39.13) as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [Amended]

2. By revising AD 87-02-05, Amendment 39-5501 (51 FR 47209; December 31, 1986), to read as follows:

Boeing: Applies to Boeing Models 727, 737-100, and 737-200 series airplanes, equipped with hydraulic system "B" Abex P/N 57186 pump motor, certificated in any category. Compliance required as indicated, unless previously accomplished.

To prevent a hydraulic system "B" Abex P/N 57186 pump motor internal wiring fault from burning a hole in the case and igniting the escaping hydraulic fluid, which could ignite fuel leakage, accomplish the following:

A. Within the next 300 hours time in service after the effective date of this AD, unless already accomplished within the last 700 hours time in service, and thereafter at intervals not to exceed 1,000 hours time in service, accomplish 1. or 2., below, as applicable:

1. Perform a visual inspection of the cavity drain system components in the left wing-body fairing area for fuel leakage in all Model 727 series airplanes in accordance with Boeing Service Bulletin 727-29-A52, dated October 22, 1976, or later FAA-approved revision. Any evidence of leakage or conditions that could lead to leakage, must be corrected prior to further flight in accordance with approved maintenance procedures.

2. Perform a visual inspection of all fuel system components and associated plumbing installed in the main wheel wells of all Model 737 series airplanes in accordance with Boeing Service Bulletin 737-29-A1033, dated October 22, 1976, or later FAA-approved revisions. Inspect for evidence of leakage, damage, and security of installations. Any evidence of leakage or conditions that could lead to leakage, must be corrected prior to further flight in accordance with approved maintenance procedures.

B. Within the next 1,000 hours time in service after the effective date of this AD, and thereafter at intervals not to exceed 1,000 hours time in service, accomplish a pressure leakage check of cavity drain system components in the left wing-body fairing area in all Model 727 series airplanes in accordance with Boeing Service Bulletin 727-29-A52, dated October 22, 1976, or later FAA-approved revisions.

C. Prior to February 2, 1988, either:

1. Install the ground fault protection systems in the hydraulic system "B" Abex motor electric power circuits in accordance with Boeing Service Bulletin 727-29-47, Revision 2, dated October 8, 1976, or Boeing Service Bulletin 737-29-1029, Revision 2, dated October 8, 1976, as applicable, or later FAA-approved revisions; or

2. Install the hydraulic "B" system motor driven pumps, either new or upgraded, in accordance with Boeing Service Bulletin 727-29-55, dated April 30, 1980, or Boeing Service Bulletin 737-29-1036, dated April 30, 1980, as applicable, or later FAA-approved revisions.

This action constitutes terminating action for the repetitive inspection requirements of paragraphs A. and B., above.

D. An alternate means of compliance or adjustment of compliance time, which provide an acceptable level of safety, may be used when approved by the Manager, Seattle Aircraft Certification Office, FAA, Northwest Mountain Region.

E. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base for the accomplishment of the requirements of this AD.

All persons affected by this directive who have not already received the appropriate service documents from the manufacturer may obtain copies upon request to the Boeing Commercial Airplane Company, P.O. Box 3707, Seattle, Washington 98124. These documents may be examined at FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or the Seattle Aircraft Certification Office, 9010 East Marginal Way South, Seattle, Washington.

This amendment becomes effective August 21, 1987.

Issued in Seattle, Washington, on July 8, 1987.

Leroy A. Keith,

Acting Director, Northwest Mountain Region.

[FR Doc. 87-16079 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-13-M

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14 CFR Part 39

[Docket No. 87-NM-81-AD; Amdt. 39-5677]

Airworthiness Directives; the de Havilland Aircraft Company of Canada, a Division of Boeing of Canada, Ltd., Model DHC-7 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to de Havilland Model DHC-7 series airplanes, which requires inspection of the fuel drain system, sealing of the fuel drain paths at the wing outboard fuel tanks, and the addition of an overboard drain system. This amendment is prompted by a recent report that fuel leaking from the No. 1 and No. 4 fuel tank end ribs can enter the landing light bay located in the No. 4 flap track canoe. This condition if not corrected, could result in a fire due to the heat generated when the landing light is operated.

EFFECTIVE DATE: August 1, 1987.

ADDRESSES: The applicable service information may be obtained from The de Havilland Aircraft Company of Canada, a Division of Boeing of Canada, Ltd., Garratt Boulevard, Downsview, Ontario M3K 1Y5, Canada. This information may be examined at FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or FAA, New England Region, New York Aircraft Certification Office, 181 South Franklin Avenue, Room 202, Valley Stream, New York.

FOR FURTHER INFORMATION CONTACT: Mr. R.J. O'Neill, Propulsion Branch, ANE-174, FAA, New England Region, New York Aircraft Certification Office, 181 South Franklin Avenue, Room 202, Valley Stream, New York 11581; telephone (516) 791-7421.

SUPPLEMENTARY INFORMATION: De Havilland Aircraft Company of Canada has advised FAA of an unsafe condition which may exist on Model DHC-7 series airplanes. The present drain paths around the fuel tank end ribs present a fire hazard with regard to the front landing light area. Fuel leaking from the No. 1 and No. 4 fuel tank end ribs can enter the landing light located in the No. 4 flap track canoe. During operation of the landing lights, temperatures in the landing light bay area can be sufficiently high to constitute an ignition source to fuel vapors in the bay. This condition, if not corrected, could result in a fire.

De Havilland issued Service Bulletin 7-57-30, dated March 6, 1987, which describes procedures for visual inspection of the lower wing external surface, external and internal inspection of the fuel tank, and a modification involving closure of the existing drain holes and the addition of an overboard drain to prevent fuel leakage into the front landing light bay. Transport Canada, which is the airworthiness authority of Canada, issued Airworthiness Directive CF 87-04 on April 14, 1987, making compliance with Service Bulletin 7-57-30 mandatory.

On May 8, 1987, de Havilland issued Revision A to Service Bulletin 7-57-30, to include a reference to the Canadian AD and to update various other information contained in the original issue.

This airplane is manufactured in Canada and type certificated in the United States under the provisions of § 21.29 of the Federal Aviation Regulations and the applicable bilateral airworthiness agreement.

Since this situation is likely to exist or develop on other airplanes of the same type design registered in the U.S., this AD requires inspections of the fuel drain system, the closure of existing drain holes, and the addition of overboard fuel drains in accordance with Revision A of de Havilland Service Bulletin 7-57-30.

Since a situation exists that requires immediate adoption of this regulation, it is found that notice and public procedure hereon are impracticable, and good cause exists for making this amendment effective in less than 30 days.

The FAA has determined that this regulation is an emergency regulation that is not considered to be major under Executive Order 12291. It is impracticable for the agency to follow the procedures of Order 12291 with respect to this rule since the rule must be issued immediately to correct an unsafe condition in aircraft. It has been further determined that this document involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). If this action is subsequently determined to involve a significant/major regulation, a final regulatory evaluation or analysis, as appropriate, will be prepared and placed in the regulatory docket (otherwise, an evaluation is not required).

List of Subjects in 14 CFR Part 39

Aviation safety, Aircraft.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends § 39.13 of Part 39 of the Federal Aviation Regulations (14 CFR 39.13) as follows:

PART 39—[AMENDED]

1. The authority citation for Part 39 continues to read as follows:

Authority: 49 U.S.C. 1354(a), 1421 and 1423; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983); and 14 CFR 11.89.

§ 39.13 [Amended]

2. By adding the following new airworthiness directive:

De Havilland Aircraft Company of Canada, a Division of Boeing of Canada, Ltd.: Applies to all Model DHC-7 series airplanes, certificated in any category. Compliance required as indicated, unless previously accomplished.

To preclude a fuel fire in the wing landing light bay, accomplish the following:

A. Within the next 50 hours time-in-service after the effective date of this AD, gain access to the No. 4 flap track canoe "footprint area," the tank end ribs, and the wing box outboard of the No. 1 and No. 4 wing fuel tanks, in accordance with Paragraph A. of the Accomplishment Instructions of de Havilland Aircraft Company of Canada Service Bulletin 7-57-30, dated March 6, 1987, or Revision A, dated May 8, 1987. Conduct an external inspection of the tank end ribs, wing box outboard of the fuel tanks, and complete front spar to rear spar footprint areas of each no. 4 flap track canoe installation, in accordance with Paragraph B. of the Accomplishment Instructions of the service bulletin. If evidence of fuel leakage is found, prior to further flight perform an internal inspection, repair, and pressure test of the fuel tank, in accordance with Paragraph C. of the Accomplishment instructions of the service bulletin.

B. Within 200 hours time-in-service after the effective date of this AD, install Modification 7/2536, in accordance with Paragraph D. of the Accomplishment Instructions of de Havilland Aircraft Company of Canada Service Bulletin 7-57-30, dated March 6, 1987, or Revision A, dated May 8, 1987.

C. Alternate means of compliance which provide an acceptable level of safety may be used when approved by the Manager, New York Aircraft Certification Office, FAA, New England Region.

D. Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base for the accomplishment of the inspections and modifications required by this AD.

All persons affected by this directive who have not already received the appropriate service information from the manufacturer may obtain copies upon request to The de Havilland Aircraft Company of Canada, a Division of Boeing of Canada, Ltd. Garrett Boulevard, Downsview, Ontario M3K 1Y5, Canada. This information may be examined at FAA, Northwest Mountain Region, 17900 Pacific Highway South, Seattle, Washington, or FAA, New England, New York Aircraft Certification Office, 181 South Franklin Avenue, Room 202, Valley Stream, New York.

This amendment becomes effective August 1, 1987.

Issued in Seattle, Washington, on July 8, 1987.

Leroy A. Keith,

Acting Director, Northwest Mountain Region.

[FR Doc. 87-16078 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-13-M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 177

[Docket No. 87F-0003]

Indirect Food Additives; Polymers

AGENCY: Food and Drug Administration, HHS.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is amending the food additive regulations to provide for the safe use of a polymer manufactured by the condensation of hexamethylenediamine, terephthalic acid, and isophthalic acid as an article or a component of articles intended to contact food. This action responds to a petition filed by E. I. duPont de Nemours and Co.

DATES: July 16, 1987; objections by August 17, 1987.

ADDRESS: Written objections to the Dockets Management Branch (HFA-305), Food and Drug Administration, Rm. 4-62, 5600 Fishers Lane, Rockville, MD 20857.

FOR FURTHER INFORMATION CONTACT: Edward J. Machuga, Center for Food Safety and Applied Nutrition (HFF-335), Food and Drug Administration, 200 C Street SW., Washington, DC 20204, 202-472-5690.

SUPPLEMENTARY INFORMATION: In a notice published in the **Federal Register** of March 3, 1987 (52 FR 6391), FDA announced that a petition (FAP-7B3982) had been filed by E. I. duPont de Nemours and Co., Wilmington, DE 19898, proposing that § 177.1500 *Nylon resins* (21 CFR 177.1500) be amended to provide for a polymer manufactured by the condensation of hexamethylenediamine, terephthalic acid, and isophthalic acid for food-contact applications.

FDA has evaluated data in the petition and other relevant material. The agency concludes that the proposed food additive use is safe and is amending 21 CFR 177.1500 by adding a new paragraph (a)(12) and by adding a new item 12 to the table in paragraph (b).

In accordance with § 177.1(h) (21 CFR 171.1(h)), the petition and the documents that the FDA considered and relied upon in reaching its decision to approve the petition are available for inspection at the Center for Food Safety and Applied Nutrition (address above) by appointment with the information contact person listed above. As provided in 21 CFR 171.1(h), the agency will delete from the documents any materials that are not available for public disclosure before making the documents available for inspection.

The Agency has carefully considered the potential environmental effects of this action and has concluded that the action will not have a significant impact on the human environment and that an environmental impact statement is not required. The agency's finding of no significant impact and the evidence supporting that finding, contained in an environmental assessment, may be seen in the Dockets Management Branch (address above) between 9 a.m. and 4 p.m., Monday through Friday. This action was considered under FDA's final rule implementing the National Environmental Policy Act (21 CFR Part 25).

Any person who will be adversely affected by this regulation may at any time on or before August 17, 1987, file with the Dockets Management Branch (address above) written objections thereto. Each objection shall be separately numbered, and each numbered objection shall specify with particularity the provisions of the regulations to which objection is made and the grounds for the objection. Each numbered objection on which a hearing is requested shall specifically so state. Failure to request a hearing for any particular objection shall constitute a waiver of the right to a hearing on that objection. Each numbered objection for which a hearing is requested shall include a detailed description and analysis of the specific factual information intended to be presented in support of the objection in the event that a hearing is held. Failure to include such a description and analysis for any particular objection shall constitute a waiver of the right to a heading on the objection. Three copies of all documents shall be submitted and shall be identified with the docket number found in brackets in the heading of this document. Any objections received in response to the regulation may be seen in the Dockets Management Branch between 9 a.m. and 4 p.m., Monday through Friday.

List of Subjects in 21 CFR Part 177

Food additives, Food packaging.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs and redelegated to the Center for Food Safety and Applied Nutrition, Part 177 is amended as follows:

PART 177—INDIRECT FOOD ADDITIVES: POLYMERS

1. The authority citation for 21 CFR Part 177 continues to read as follows:

Authority: Secs. 201(s), 409, 72 Stat. 1784–1788 as amended (21 U.S.C. 321(s), 348); 21 CFR 5.10, 5.61.

2. Section 177.1500 is amended by adding new paragraph (a)(12) and by adding a new item 12 to the table in paragraph (b), to read as follows:

§ 177.1500 Nylon resins.

* * * * *

(a) * * *

(12) Nylon 6I/6T resins (CAS Reg. No. 25750–23–6) are manufactured by the condensation of hexamethylenediamine, terephthalic acid, and isophthalic acid such that 65 to 80 percent of the polymer units are derived from hexamethylene isophthalamide.

(b) * * *

Nylon resins	Specific gravity	Melting point (degrees Fahrenheit)	Solubility in boiling 4.2N HCl	Maximum extractable fraction as selected solvents (expressed in percent by weight of resin)			
				Water	95 percent ethyl alcohol	Ethyl acetate	Benzene
*	*	*	*	*	*	*	
12. Nylon 61/6T resins for use only in contact with food types IV-A, V, VIII, and IX described in table 1 of § 176.170(c) of this chapter.	1.207±0.1	N/A	Insoluble after 1 hour...	0.2	1.0	0.1	0.1

* * * * *

Dated: July 6, 1987.

Sanford A. Miller,

Director, Center for Food Safety and Applied Nutrition.

[FR Doc. 87–16095 Filed 7–15–87; 8:45 am]

BILLING CODE 4160-01-M

DEPARTMENT OF THE TREASURY

26 CFR Parts 1, 601, and 602

[T.D. 8146]

Income Tax; Taxable Years Beginning After December 31, 1953; Statement of Procedural Rules; Residential Energy Credit

AGENCY: Internal Revenue Service, Treasury.

ACTION: Final regulations.

SUMMARY: This document contains final regulations under section 23 (formerly section 44C) of the Internal Revenue Code relating to the residential energy credit. Changes to the applicable tax law were made by sections 201(a), 202, and 203 of the Crude Oil Windfall Profit Tax Act of 1980. These regulations provide the public with the guidance needed to comply with the law. The document also amends final regulations under section 6050D, relating to information returns with respect to energy grants and financing, because the residential energy credit has expired.

DATES: *Effective Dates*: The redesignations revisions and amendments are effective for taxable years beginning after December 31, 1983, except as follows:

Effective Dates

For expenditures made after April 19, 1977.	Addition of the first sentence in new paragraph (d)(3)(i) of § 1.44C–1. Addition of a new paragraph (d)(3)(ii) to § 1.44C–1.
For expenditures made after April 19, 1977, in taxable years beginning before January 1, 1980.	Revision of the second sentence in paragraph (d)(2)(i) of § 1.44C–1. Revision within example (2) in paragraph (h)(4) of § 1.44C–3.
For expenditures made after April 19, 1977, in taxable years beginning before January 1, 1984.	Amendments to redesignated paragraph (d)(4)(ii) of § 1.44C–1.
For expenditures made after December 31, 1979.	Addition of a new sentence at the beginning of the flush material in paragraph (b)(2) of § 1.44C–2. Amendment to paragraph (d)(4)(iv) of § 1.44C–2. Amendment to the flush material in paragraph (e)(1)(iii) of § 1.44C–2. Amendment to the first sentence of paragraph (e)(2) of § 1.44C–2. Revisions in paragraph (f)(1) of § 1.44C–2. Revisions and addition within paragraph (f)(4) of § 1.44C–2. Amendments to paragraphs (g) and (h) of § 1.44C–2. Revisions of the heading and text of paragraph (j)(1) of § 1.44C–3.
For expenditures made in taxable years beginning after December 31, 1979.	Revision of paragraph (c) of § 1.44C–1.
For financing or grants made in taxable years beginning after December 31, 1980.	Addition of a new paragraph (i) to § 1.44C–2. Revision of paragraph (c) of § 1.44C–3.
For taxable years beginning after December 31, 1980.	Redesignation of and within paragraph (d)(3) of § 1.44C–1. Addition of the second and third sentences in new paragraph (d)(3)(i) of § 1.44C–1. Amendment to the first sentence of paragraph (e) of § 1.44C–1, concerning the reference to paragraph (d)(3).
For financing and grants with respect to energy conservation expenditures and renewable energy source expenditures made after December 31, 1985.	Amendments to § 1.6050D–1.

The residential energy credit does not apply to expenditures made after December 31, 1985. However, any unused credit may be carried forward to taxable years beginning before January 1, 1988.

FOR FURTHER INFORMATION CONTACT: Beverly A. Baughman of the Legislation and Regulations Division, Office of Chief Counsel, Internal Revenue Service, 1111 Constitution Avenue NW., Washington, DC 20224 (Attention: CC:LR:T). (202–566–3297, not a toll-free number.)

SUPPLEMENTARY INFORMATION:

Background

On October 31, 1985, the **Federal Register** published proposed reguations (50 FR 45423) to the Income Tax Regulations (26 CFR Part 1) under section 23 (formerly section 44C) of the Internal Revenue Code of 1954. The amendments were proposed to conform the regulations to sections 201(a), 202, and 203 of the Crude Oil Windfall Profit Tax Act of 1980 (Pub. L. 96–223, 94 Stat. 256, 258) and Section 471 of the Tax Reform Act of 1984 (Pub. L. 98–369, 98 Stat. 825). A public hearing was held on February 14, 1986. After consideration of all comments regarding the proposed amendments, those amendments are adopted as revised by this Treasury decision.

In addition, on March 29, 1985, the **Federal Register** published final regulations (50 FR 12531) to the Income Tax Regulations (26 CFR Part 1) under section 6050D. These regulations are amended because the residential energy credit has expired. It does not apply to expenditures made after December 31, 1985.

Summary of Comments in General

Under section 23 a credit against Federal income tax is allowed for "qualified energy conservation expenditures" and "qualified renewable energy source expenditures."

Section 1.23–1(c) of the final regulations reflects the statutory increase of the credit for renewable energy source expenditures to 40 percent of up to $10,000 of expenditures, for a maximum credit of $4,000. Section 1.23–1(d)(3) provides that expenditures financed with subsidized energy financing or Federal, state or local nontaxable grants are not taken into account in computing the credit except to reduce the maximum amount of allowable expenditures.

Section 1.23–2(b) expands the definition of the term "renewable energy source expenditures." Certain expenditures for an onsite well drilled for any geothermal deposit are treated as renewable energy source expenditures, but only if the taxpayer has not elected under section 263(c) to deduct any portion of such expenditures.

Section 1.23–2(f) expands the definition of the term "solar energy property" (a category of "renewable energy source property") to include systems that use solar energy to produce electricity. In addition, certain solar roof panels, although structural components of the buildings in which they are installed, are treated as renewable energy source property.

Subsidized Energy Financing

Section 1.23–2(i)(1) of the final regulations defines subsidized energy financing. The definition clarifies that financing is subsidized if the interest rate or other terms of the financing provided to the taxpayer in connection with a government energy program or used to raise funds for the program are more favorable than the terms generally available commercially. In addition, financing is subsidized if the principal obligation of the financing provided to the taxpayer is reduced by funds provided under the program.

In example (5) of § 1.23–2(i)(2), a taxpayer borrows $3,000 from a bank in order to purchase a solar water heating system. The bank uses $500 of the funds it receives under a Federal program, a principal purpose of which is to provide subsidized financing for projects designed to conserve or produce energy, to reduce the principal obligation of the loan to the taxpayer to $2,500. The amount of subsidized energy financing is $3,000.

Many commentators objected to defining subsidized energy financing to include more than the amount of the actual subsidy received from a government program (*i.e.*, more than the $500 referred to in example (5) of § 1.23–2(i)(2)). Another commentator objected to defining the term to include more than the amount of expenditures taken into account for purposes of determining the amount of financial assistance disbursed under a government energy program. In addition, some commentators criticized the retroactive application of the definition.

The final regulations retain the definition of subsidized energy financing included in the proposed regulations because that definition and its effect are supported by Code section 23(c)(10)(C), which was added to the Code by section 203(a) of the Windfall Profit Tax Act of 1980 ("Act"), and the language contained in the Conference Report explaining the section (H.R. Rep. No. 96–817, 96th Cong., 2d. Sess. 121 (1980)). Section 22(c)(10)(C) defines subsidized energy financing as "*financing* provided under a Federal, State, or local program a principal purpose of which is to provide subsidized financing for projects designed to conserve or produce energy" (emphasis added). Thus, the definition refers to financing provided under a government program, not just the cost to a government of its subsidy with respect to the financing. In addition, the Conference Report states on page 121 that "the purchaser of the eligible equipment must choose between the tax credit, on the one hand, and subsidized energy loans and nontaxable grants, on the other hand * * *. [T]he portion of the expenditures which is provided by subsidized energy financing [$3,000 in example (5)] is not to be eligible for a tax credit."

The effective date of the definition of subsidized energy financing contained in the final regulations is for financing made in taxable years beginning after December 31, 1980. This is the effective date provided by section 203(c) of the Act.

In defining subsidized energy financing § 1.23–2(i)(1) provides that the source from which the funds for a government energy program are derived is not a factor to be taken into account in determining whether the financing is subsidized. The definition of subsidized energy financing only requires that subsidized funds be made available under Federal, State and local programs. It does not distinguish among revenue sources financing such programs. Thus, below market loans provided through Federal, State or local government energy programs that are funded with amounts received from oil overcharge funds are subsidized energy financing as illustrated by example (2) in § 1.23–2(i)(2). Several commentators suggested excluding such loans from the definition of subsidized energy financing. The final regulations do not adopt this suggestion because the purpose of adding section 23(c)(10) to the Code, as stated on page 121 of the Conference Report, was to prevent a taxpayer from taking both a tax credit with respect to expenditures made for eligible equipment and using subsidized energy loans under a Federal, State or local program to purchase such equipment. If a taxpayer is allowed a tax credit with respect to expenditures paid for with subsidized financing obtained through a government program the funds for which are derived from certain sources and not allowed a tax credit where the funds are derived from other sources, the purpose of section 23(c)(10) is thwarted.

Non-Taxable Grants

Section 1.23–1(i)(2) of the final regulations states that subsidized energy financing does not include grants, whether or not includible in gross income under section 61. One commentator thought that grants should be included within the definition of subsidized energy financing because grants provide taxpayers with a double benefit in the same manner as subsidized loans.

Section 23(c)(10)(C) defines subsidized energy financing as financing provided under a Federal, State or local program. The Conference Report under the Act, at page 121, states that "[g]rants which are taxable are not taken into account under these rules [relating to subsidized energy financing] because their taxation serves as a partial offset". However, with respect to non-taxable grants, section 23(c)(10)(B)(ii) provides that the dollar limits provided for in section 23(b) (1) and (2) with respect to energy conservation property or renewable energy source property, respectively, are reduced by the amount of any grants not included in the taxpayer's gross income. Thus, while non-taxable grants do not constitute subsidized energy financing they nevertheless are taken into account for purposes of reducing qualified expenditures. See § 1.23–1(d)(3)(i) of the final regulations.

Performance and Quality Standards

The proposed regulations contained performance and quality standards for energy-conserving components and solar energy property. Several commentators stated that some of the standards for solar energy property were unnecessary because they duplicate existing industry standards. In addition, the energy conservation property credit expired on December 31, 1985. Because those proposed standards would have applied only after their publication in the final regulations, they would serve no useful purpose. Accordingly, the proposed energy conservation property and the solar property standards are deleted from the final regulations.

Regulatory Flexibility Act; Executive Order 12291; and Paperwork Reduction Act of 1980

The Commissioner of Internal Revenue has determined that this final rule is not a major rule as defined in Executive Order 12291 and that a Regulatory Impact Analysis is therefore not required.

Although a notice of proposed rulemaking soliciting public comment was issued, the Internal Revenue Service concluded when the notice was issued that the regulations are interpretative and that the notice and public procedure requirements of 5 U.S.C. 553 do not supply. Accordingly, the final regulations do not constitute regulations subject to the Regulatory Flexibility Act (5 U.S.C. Chapter 6). The reporting requirements added by this document have been submitted to the Office of Management and Budget (OMB) in accordance with the requirements of the Paperwork Reduction Act of 1980. The reporting requirements have been approved by OMB (control number 1545–0232).

Drafting Information

The principal author of these regulations is Beverly A. Baughman of the Legislation and Regulations Division of the Office of Chief Counsel, Internal Revenue Service. However, personnel from other offices of the Internal Revenue Service and Treasury Department participated in developing the regulations both on matters of substance and style.

List of Subjects

26 CFR 1.0–1 Through 1.58–8

Income taxes, Tax liability, Tax rates, Credits.

26 CFR 1.001–1 Through 1.1102–3

Income taxes, Gain and loss, Basis, Nontaxable exchanges.

26 CFR 1.6001–1 Through 1.6109–2

Income taxes, Administration and procedure, Filing requirements.

26 CFR Part 601

Administrative practice and procedure, Aged, Alcohol and alcoholic beverages, Arms and munitions, Cigars and cigarettes, Claims, Freedom of information, Taxes.

26 CFR Part 602

Reporting and recordkeeping requirements.

Proposed Amendments to the Regulations

Accordingly, 26 CFR Parts 1, 601 and 602 are amended as follows:

PART 1—[AMENDED]

Paragraph 1. The authority for Part 1 is amended by adding the following citation:

Authority: 26 U.S.C. 7805. * * * Sections 1.23–1 through 1.23–6 also issued under 26 U.S.C. 23.

§ 1.44C-1 [Redesignated as § 1-23-1 and Amended]

Par. 2. § 1.44C–1 is redesignated as § 1.23–1 and is amended as follows:

1. Paragraph (a) is amended—

a. By removing from the first sentence "Section 44C" and adding in its place the words "Section 23 or former section 44C",

b. By removing from the third sentence "§ 1.44C–3" and adding in its place "§ 1.23–3", and

c. By removing from the seventh sentence "§ 1.44C–3(h)" and adding in its place "§ 1.23–3(h)".

2. Paragraph (b) is amended by removing from the last sentence "§ 1.44C–2(a)" and adding in its place "§ 1.23–2(a)".

3. Paragraph (c) is revised to read as set forth below.

4. Paragraph (d) is amended—

a. By removing from the first sentence of paragraph (d)(2)(i) "§ 1.44–C–3(h)" and adding in its place "§ 1.23–3(h)".

b. By revising the second sentence of paragraph (d)(2)(i) to read as set forth below,

c. By removing from the last sentence of paragraph (d)(2)(ii) "§ 1.44C–3(h)" and adding in its place "§ 1.23–3(h)",

d. By redesignating paragraph (d)(3)(i), (ii), (iii), (iv), (v), (vi), (vii), (viii), (ix), and (x) as paragraphs (d)(4)(ii) (A), (B), (C), (D), (E), (F), (G), (H), (I), and (J), respectively, and by inserting a new paragraph (d)(3) after paragraph (d)(2) to read as set forth below,

e. By inserting a new paragraph (d)(4)(i) after new paragraph (d)(3) to read as set forth below,

f. By removing from the heading of redesignated paragraph (d)(4)(ii) the words "*Tax Liability Limitation.*" and adding in their place "*For taxable years beginning before January 1, 1984.*", and

g. In redesignated paragraph (d)(4)(ii) introductory text, by removing the first word, "The", and adding in its place the words "For taxable years beginning before January 1, 1984, the".

5. Paragraph (e) is amended—

a. By removing from the heading the word "Carryover" and adding in its place the word "Carryforward",

b. By removing from the first sentence "section 44C(b)(5)" and adding in its place "section 23(b)(5) (or former section 44C(b)(5))",

c. By removing from the first sentence "paragraph (d)(3)" and adding in its place "paragraph (d)(4)", and

d. By removing the words "carryover" and "carried over" wherever they appear and adding in their place the words "carryforward" and "carried forward", respectively.

§ 1.23–1 Residential energy credit.

* * * * *

(c) *Qualified renewable energy source expenditures.* In the case of taxable years beginning after December 31, 1979, the qualified renewable energy source expenditures are 40 percent of the renewable energy source expenditures made by the taxpayer during the taxable year (and before January 1, 1986) with respect to the dwelling units that do not exceed $10,000. In the case of taxable years beginning before January 1, 1980, the qualified renewable energy source expenditures are the renewable energy source expenditures made by the taxpayer with respect to the dwelling unit during the taxable year, but not in excess of—

(1) 30 percent of the expenditures up to $2,000, plus

(2) 20 percent of the expenditures over $2,000, but not more than $10,000.

See § 1.23–2(b) for the definition of renewable energy source expenditures.

(d) *Limitation.* * * *

(2) *Prior expenditures taken into account*—(i) *In general.* * * * In the

case of expenditures made during taxable years beginning before January 1, 1980, the reduction of the maximum amount under paragraph (c) must first be made with respect to the first $2,000 of expenditures (to which a 30 percent rate applies) and then with respect to the next $8,000 of expenditures (to which a 20 percent rate applies). * * *

* * * * *

(3) *Effects of grants and subsidized energy financing*—(i) *In general.* Qualified expenditures financed with Federal, State, or local grants shall be taken into account for purposes of computing the residential energy credit only if the amount of such grants is taxable as gross income to the taxpayer under section 61 (relating to the definition of gross income) and the regulations thereunder. In the case of taxable years beginning after December 31, 1980, qualified expenditures made from subsidized energy financing (as defined in § 1.23–2(i)) shall not be taken into account (except as provided in the following sentence) for purposes of computing the residential energy credit. In addition, the taxpayer must reduce the maximum amount allowable expenditures (reduced as provided in paragraph (d)(2) of this section) with respect to the dwelling unit in computing qualified energy conservation expenditures (under paragraph (b) of this section) or qualified renewable energy source expenditures (under paragraph (c) of this section), whichever is appropriate, by an amount equal to the sum of—

(A) The amount of expenditures from subsidized energy financing (as defined in § 1.23–2(i)) that were made by the taxpayer during the taxable year or any prior taxable year beginning after December 31, 1980, with respect to the same dwelling unit, and

(B) The amount of any funds received by the taxpayer during the taxable year or any prior taxable year beginning after December 31, 1980, as a Federal, State, or local government grant made in taxable years beginning after December 31, 1980, that were used to make qualified expenditures with respect to the same dwelling unit and that were not included in the gross income of the taxpayer.

(ii) *Example.* The provisions of this paragraph (d)(3) may be illustrated by the following example:

Example. A had in 1979 made a renewable energy source expenditure of $2,000 in connection with A's residence for which he took the then allowed credit of $600. In 1981 A made additional renewable energy source expenditures of $9,000 with respect to which he received a loan of $5,000 from the Federal Solar-Energy and Energy Conservation Bank. Assume that the loan is subsidized energy financing. A computes the credit as follows: The initial maximum allowable dollar limit is $10,000 which is reduced by the sum of the prior year expenditures of $2,000 and the subsidized energy financing loan of $5,000 leaving a dollar limit of $3,000 ($10,000−($2,000+$5,000)). The $5,000 portion of the $9,000 funded by the subsidized energy financing loan is not allowed as a renewable energy source expenditure. The remaining expenditures in 1981 are $4,000 ($9,000−$5,000). However, this amount exceeds the allowed maximum dollar limit of $3,000. Therefore, A's creditable expenses for 1981 are only $3,000 on which the credit is $1,200 (40 percent of $3,000).

(4) *Tax liability limitation*—(i) *For taxable years beginning after December 31, 1983.* For taxable years beginning after December 31, 1983, the credit allowed by this section shall not exceed the amount of tax imposed by chapter 1 of the Internal Revenue Code of 1954 for the taxable year, reduced by the sum of credits allowable under—

(A) Section 21 (relating to expenses for household and dependent care services necessary for gainful employment),

(B) Section 22 (relating to credit for the elderly and the permanently and totally disabled), and

(C) Section 24 (relating to contributions to candidates for public office).

See section 26 (b) and (c) for certain taxes that are not treated as imposed by chapter 1.

* * * * *

§ 1.44C–2 [Redesignated as § 1.23–2 and Amended]

Par. 3. Section 1.44C–2 is redesignated as § 1.23–2 and is amended as follows:

1. In the introductory text, the language "section 44C" is removed and the language "section 23 or former section 44C" is added in its place.

2. Paragraph (a) thereof is amended—

a. By removing from the last sentence of paragraph (a)(1)(i) "§ 1.44C–3(e)" and adding in its place "§ 1.23–3(e)", and

b. By removing from the second sentence of paragraph (a)(1)(iii) "§ 1.44C–3(f)" and adding in its place "§ 1.23–3(f)".

3. Paragraph (b) is amended—

a. By removing from the last sentence of paragraph (b)(1) "§ 1.44C–3(e)" and adding in its place "§ 1.23–3(e)", and

b. By adding a new sentence as concluding text of paragraph (b) (to follow paragraph (b)(2)), to read as set forth below.

4. Paragraph (c)(4) is amended by removing from the first sentence "§ 1.44C–4" and adding in its place "§ 1.23–4".

5. Paragraph (d) is amended—

a. By removing from paragraph (d)(3) "§ 1.44C–4" and adding in its place "§ 1.23–4",

b. By removing from the first sentence of paragraph (d)(4)(iv) the word "include" and adding in its place the word "mean", and

c. By removing from the last sentence of paragraph (d)(4)(viii) "§ 1.44C–6" and adding in its place "§ 1.23–6".

6. Paragraph (e) is amended–

a. By removing from paragraph (e)(1)(iii) "§ 1.44C–4" and adding in its place "§ 1.23–4",

b. By revising the first sentence of the concluding text of (e)(1) (which follows paragraph (e)(1)(iii)) to read as set forth below,

c. By removing "§ 1.44C–3 (l)" from the last sentence in the concluding text of (e)(1) (which follows paragraph (e)(1))(iii)) and adding in its place "§ 1.23–3 (l)",

d. By adding in paragraph (e)(2) the words "or (in the case of expenditures made after December 31, 1979) electricity" immediately following the words "or providing hot water" in the first sentence, and

e. By removing from the last sentence of paragraph (e)(2) "§ 1.44C–6" and adding in its place "§ 1.23–6".

7. Paragraph (f) is amended—

a. By revising the first and third sentences of paragraph (f)(1) to read as set forth below,

b. By revising the third sentence of paragraph (f)(4) and adding two new sentences immediately after that sentence, to read as set forth below.

8. Paragraph (g) is amended by removing from the beginning of the first sentence the word "includes" and adding in its place the word "means".

9. Paragraph (h) is amended by removing from the first sentence the word "includes" and adding in its place the word "means" and by adding a new sentence immediately after the first sentence to read as set forth below.

10. A new paragraph (i) is added immediately after paragraph (h) to read as set forth below.

§ 1.23–2 Definitions.

* * * * *

(b) *Renewable energy source expenditures.* * * *

Additionally, the term "renewable energy source expenditures" includes expenditures made after December 31, 1979, and before January 1, 1986, for an onsite well drilled for any geothermal deposit (as defined in paragraph (h)), or for labor costs properly allocable to onsite preparation, assembly, or original installation of such well, but only if the requirements of paragraphs (b) (1) and

(2) of this section are met and the taxpayer has not elected under section 263(c) to deduct any portion of such expenditures or allocable labor costs.

* * *

* * * * *

(e) *Renewable energy source property*—(1) *In general.* * * *

(iii) * * *

Renewable energy source property does not include heating or cooling systems, nor systems to provide hot water or electricity, which serve to supplement renewable energy source equipment in heating, cooling, or providing hot water or electricity to a dwelling unit, and which employ a form of energy (such as oil or gas) other than solar, wind, or geothermal energy (or other forms of renewable energy provided in paragraph (e)(2) of this section. * * *

(f) *Solar energy property*—(1) *In general.* The term "solar energy property" means equipment and materials of a solar energy system as defined in this paragraph (and parts solely related to the functioning of such equipment) which, when installed in connection with a dwelling, transmits or uses solar energy to heat or cool the dwelling or to provide hot water or (in the case of expenditures made after December 31, 1979) electricity for use within the dwelling. * * * Property which uses, as an energy source, fuel or energy which is indirectly derived from sunlight (solar radiation), such as fossil fuel or wood or heat in underground water, is not considered solar energy property. * * *

* * * * *

(4) *Components with duel functions.* * * * For example, roof ponds that form part of a roof (including additional structural components to support the roof), windows (including clerestories and skylights), and greenhouses do not qualify as solar energy property. However, with respect to expenditures made after December 31, 1979, a solar collector panel installed as a roof or portion thereof (including additional structural components to support the roof attributable to the collector) does not fail to qualify as solar energy property solely because it constitutes a structural component of the dwelling on which it is installed. For this purpose, the term "solar collector panel" does not include a skylight or other type of widow. * * *

* * * * *

(h) *Geothermal energy property.* * * * With respect to expenditures made after December 31, 1979, the term "geothermal energy property" also means equipment (and parts solely related to the functioning of such equipment) necessary to transmit or use energy from a geothermal deposit to produce electricity for use within the dwelling.

* * *

(i) *Subsidized energy financing*—(1) *In general.* The term "subsidized energy financing" means financing (*e.g.*, a loan) made directly or indirectly (such as in association with, or through the facilities of, a bank or other lender) during a taxable year beginning after December 31, 1980, under a Federal, State, or local program, a principal purpose of which is to provide subsidized financing for projects designed to conserve or produce energy. For purposes of this paragraph (i), financing is made when funds that constitute subsidized energy financing are disbursed. Subsidized energy financing includes financing under a Federal, State, or local program having two or more principal purposes (provided that at least one of the principal purposes is to provide subsidized financing for projects designed to conserve or produce energy), but only to the extent that the financing—

(i) Is to be used for energy production or conservation purposes, or

(ii) Is provided out of funds designated specifically for energy production or conservation.

Loan proceeds meet the use test of paragraph (i)(1)(i) of this section only to the extent that the loan application, the loan instrument, or any other loan-related documents indicate that the funds are intended for such use. However, loan proceeds designated for the purchase either of property that contains "insulation" or any "other energy-conserving component" or of "renewable energy source property" as defined in paragraphs (c), (d), and (e), respectively, of this section meet the test of paragraph (i)(1)(i) of this section. Financing is subsidized if the interest rate or other terms of the financing (including any special tax treatment) provided to the taxpayer in connection with the program or used to raise funds for the program are more favorable than the terms generally available commercially. In addition, financing is subsidized if the principal obligation of the financing provided to the taxpayer is reduced by funds provided under the program. The source from which the funds for the program are derived is not a factor to be taken into account in determining whether the financing is subsidized. If a public utility disburses funds for the financing of energy conservation or renewable energy source property under a program that obtains the funds through sales to the utility's ratepayers, the program is not considered to be a Federal, State or local program even though the utility is a governmental agency, and, thus, the funds are not subsidized energy financing. Subsidized energy financing does not include a grant includible in gross income under section 61, nontaxable grants, a credit against State or local taxes made directly to the taxpayer claiming the credit provided for in section 23, or a loan guarantee made directly to the taxpayer claiming the credit provided for in section 23.

(2) *Examples.* The provisions of this paragraph (i) may be illustrated by the following examples:

Example (1). State A has a farm and home loan program. The program is used to provide low interest mortgage loans. In 1984 State A's legislature enacted statutory amendments to its farm and home loan program in an effort to encourage energy conservation-type measures. Low interest loans for such improvements were made available to qualified purchasers and owners under the farm and home loan program. The energy conservation measures subsidized by the program include energy conserving components and renewable energy source devices. State A's tax exempt bonds are the source of funds for loans under the program. Although the 1984 legislation authorizing loans for energy conserving componets and renewable energy source improvements did not diminish the original purpose of the farm and home loan program, the 1984 legislation added anther principal purpose to the program. Therefore, State A's program which has two principal purposes, one of which is the conservation or production of energy, is considered as providing subsidized energy financing for purposes of section 23 (c)(10) of the Code, to the extent that financing is provided by State A out of funds designated specifically for energy production or conservation. State A's program will also be considered as providing subsidized energy financing to the extent that the loan proceeds are to be used for energy production or conservation purposes. Loan proceeds meet the use test of the preceding sentence only to the extent that loan application, the loan instruments, or any other loan-related documents indicate that the funds are intended for such use.

Example (2). The United States Department of Energy disburses funds to State B that the Department received from settlements from alleged petroleum pricing and allocation violations. State B establishes a program under which B will use the funds to make loans at below market interest rates directly to qualified applicants for the purchase of renewable energy source property. B's loans are subsidized energy financing.

Example (3). State C establishes a program under which C will make loans at below market interest rates directly to qualified applicants for the purchases of renewable energy source property. The program is funded with money that State C was able to borrow after it obtained a loan guarantee from a Federal agency. C's loans provided under the program are subsidized energy financing.

Example (4). Company D is an electric utility that is a federal agency. D purchases its electricity from another federal agency, transmits the electricity over its own distribution system, and sells the electricity to numerous local public utilities that in turn sell the electricity to their customers. D wishes to start a program under which D will make loans at below market interest rates directly to customers of the local utilities for the purchase of renewable energy source property from D. The local public utility will act as the collection agent for repayment of the loans. The loans will be repayable over a period of time not in excess of 15 years. Under law, D must cover its full costs through its own revenues derived from the sale of power and other services. While D may borrow by sale of bonds to the United States Treasury, D must borrow at rates comparable to the rates prevailing in the market for similar bonds. Thus, the subsidized loans made under D's program will be financed by the profits from the sale of electricity to consumers and not by the federal government. D's program, which is substantially the same as that carried out by private (investor-owned) utilities, is not considered to be a Federal, State or local governmental program. Therefore, D's loans are not subsidized energy financing.

Example (5). The Solar Energy and Energy Conservation Bank (Bank) disburses funds to State E. E disburses a portion of the funds to Financial Institution F. Both the Bank and State E make these disbursements under a program the principal purpose of which is to provide subsidized financing for projects designed to conserve or produce energy. F uses the funds to reduce a portion of the principal obligation on loans it issues to finance energy conservation or solor energy expenditures. Taxpayer G borrows $3,000 from F in order to purchase a solar water heating system. F uses $500 of the funds it received from the Bank to reduce the principal obligation of the loan to G to $2,500. The amount of subsidized energy financing to G is $3,000.

Example (6). State H allows a tax credit to Financial Institution J under a program the principal purpose of which is to provide loans at below market interest rates directly to qualified applicants for the purchase of renewable energy source property. J receives a credit each year in the amount of the excess of the interest that would have been paid at private market rates over the actual interest paid on such loans. The State H tax credit arrangement is an interest subsidy. Thus, any low-interest loans made pursuant to this credit arrangements are subsidized energy financing.

§ 1.44C-3 [Redesignated as § 1.23-3 and Amended]

Par. 4. Section 1.44C-3 is redesignated as § 1.23-3 and is amended as follows:

1. Paragraph (a)(1) is amended by removing from the first sentence "section 44C" and adding in its place "section 23 or former section 44C".

2. Paragraph (b) is amended by removing "section 44C" in the first and second sentences and adding in its place thereof "section 23 or former section 44C".

3. The heading and text of paragraph (c) are revised to read as set forth below.

4. Paragraph (d) is amended by removing "§ 1.44C-2(a)", "§ 1.44C-2 (b)", "§ 1.44C-1(b)", and "§ 1.44C-1(c)" and adding in their places "§ 1.23-2(a)", "§ 1.23-2(b)", "§ 1.23-1 (b)" and "§ 1.23-1(c)", respectively.

5. Paragraph (e) is amended by removing from the first sentence "section 44C" and adding in its place "section 23 or former section 44C".

6. Paragraph (h) is amended—

a. By removing from the first sentence of paragraphs (h)(1)(i) and (ii) "section 44C" and adding in place thereof "section 23 or former section 44C",

b. By removing from paragraph (h)(2) "section 44C" and adding in its place "section 23 or former section 44C",

c. By removing from paragraph (h)(2) "§ 1.44C-1" and adding in its place § 1.23-1",

d. By removing from the second sentence of paragraph (h)(3) "section 44C" and adding in its place "section 23 of former section 44C", and

e. By revising the first sentence of example (2) in paragraph (h)(4) to read as set forth below.

7. Paragraph (j) is amended—

a. By revising the heading and text of paragraph (j)(1) to read as set forth below, and

b. By removing from the last sentence of the example in paragraph (j)(2) "§ 1.44C-1(d)(1)" and "§ 1.44C-1(d)(2)" and adding in their places "§ 1.23-1(d)(1)" and "§ 1.23-1(d)(2)", respectively.

8. Paragraph (k) introductory text is amended by removing "section 44C" and adding in its place "section 23 or former section 44C".

§ 1.23-3 Special rules.

* * * * *

(c) *Cross reference.* For rules relating to expenditures financed with Federal, State, or local government grants or subsidized financing see paragraph (d) (3) of § 1.23-1 and paragraph (i) of § 1.23-2.

* * * * *

(h) *Joint occupancy.* * * *
(4) * * *

Example (2). In 1978, spouses C and D make $10,000 of renewable energy source expenditures with respect to their principal residence, half of which is paid by each spouse. * * *

* * * * *

(j) *Joint ownership of energy conservation property or renewable energy source property*—(1) *In general.* Energy conservation property renewable energy source property include property which is jointly owned by the taxpayer and another person (or persons) and installed in connection with two or more dwelling units. For example, the fact that a windmill, solar collector, or geothermal well and distribution system is owned by two or more individuals does not preclude its qualification as renewable energy source property. The amount of the credit allowable under section 23 shall be computed separately with respect to the amount of the expenditures made by each individual, subject to the limitations of $2,000 imposed by section 23(b)(1) and $10,000 imposed by section 23(b)(2), per dwelling units of jointly owned property. For example, in 1982, A, B, and C purchased as joint owners renewable energy source property that serviced two houses. One of the houses is jointly owned and occupied by A and B and the other is owned and occupied by C alone. The renewable energy source property cost $30,000 of which A paid $9,000, B paid $6,000, and C paid $15,000. A and B must share the $4,000 credit (40% of $10,000 maximum) with respect to the expenditures for the jointly owned house. Therefore, A is allowed a $2,400 credit ($4,000 times $9,000 divided by $9,000 plus $6,000) and B is allowed a $1,600 credit ($4,000 times $6,000 divided by $9,000 plus $6,000) with respect to the expenditures attributable to the jointly owned house. C is entitled to a credit of $4,000 with respect to the expenditures attributable to the other house.

* * * * *

§ 1.44C-4 [Redesignated as § 1.23-4]

Par. 5. Section 1.44C-4 is redesignated § 1.23-4.

§ 1.44C-5 [Redesignated as § 1.23-5 and Amended]

Par. 6. Section 1.44C-5 is redesignated § 1.23-5 and is amended as follows:

1. Paragraph (a) is amended—

a. By removing from paragraph (a)(1) "§ 1.44C-2(c)(1)" and adding in its place "§ 1.23-2(c)(1)",

b. By removing from paragraph (a)(2) "section 44C(c)(4)" and adding in its place "section 23(c)(4) or former section 44C(c)(4) ",

c. By removing from paragraph (a)(2) "§ 1.44C-2(d)(4)" and adding in its place "§ 1.23-2(d)(4)",

d. By removing from paragraph (a)(3) "§ 1.44C-2(f)", "§ 1.44C-2(g)" and "§ 1.44C-2(h)" and adding in their places "§ 1.23-2(f)", "§ 1.23-2(g)", and "§ 1.23-2(h)", respectively,

e. By removing from paragraph (a) (4) "§ 1.44C–2" and adding in its place "§ 1.23–2", and

f. By removing from paragraph (a)(5) "§ 1.44C–2 and adding in its place "§ 1.23–2".

2. Paragraph (b)(1) is amended by removing from the first sentence the words "Assistant Commissioner (Technical), T:C:E, 1111 Constitution Avenue NW.," and adding in their place the words "Associate Chief Counsel (Technical), CC:C:E, 1111 Constitution Avenue NW.,".

3. Paragraph (c) is amended—

a. By removing from the third sentence "§ 1.44C–2" and adding in its place "§ 1.23–2", and

b. By removing from the last sentence "§ 1.44C–4" and adding in its place "§ 1.23–4".

§ 1.44C–6 [Redesignated as § 1.23–6 and Amended]

Par. 7. Section 1.44C–6 is redesignated as § 1.23–6 and is amended as follows:

1. Paragraph (a)(1) is amended by removing from the first sentence "§ 1.44C–2" and adding in its place "§ 1.23–2".

2. Paragraph (e) is amended—

a. By removing from the first sentence "§ 1.44C–1" and adding in its place "§ 1.23–1", and

b. By removing from the third sentence "§ 1.44C–4" and adding in its place "§ 1.23–4".

§ 1.1016–5 [Amended]

Par. 8. Paragraph (t) of § 1.1016–5 is revised to read as follows:

§ 1.1016–5 Miscellaneous adjustments to basis.

* * * * *

(t) *Section 23 credit.* In the case of property with respect to which a credit has been allowed under section 23 or former section 44C (relating to residential energy credit), basis shall be adjusted as provided in paragraph (k) of § 1.23–3.

Par. 9. Section 1.6050D–1 is amended as follows:

1. Paragraph (a) introductory text is amended by adding a new sentence immediately following the first sentence to read as set forth below.

§ 1.6050D–1 Information returns relating to energy grants and financing.

(a) *Requirement of reporting.* * * * However, the preceding sentence shall not apply if none of the financing and grants provided under such program during the calendar year relate either to expenditures described in section 23(c) (1) or (2), relating to the residential energy credit, made by a taxpayer before January 1, 1986, with respect to a dwelling unit or to section 38 property (as defined in section 48 and the regulations thereunder). * * *

* * * * *

2. Paragraph (a)(1) is amended by removing the words "(as defined in section 48 and the regulations thereunder) or a dwelling unit which" and adding in their place the words "or, in the case of financing or a grant for energy conservation expenditures or renewable energy source expenditures made by the taxpayer before January 1, 1986, a dwelling unit that".

Statement of Procedural Rules (26 CFR Part 601)

PART 601—[AMENDED]

Par. 10. The authority citation for Part 601 continues to read as follows:

Authority: 26 U.S.C. 7805.

§ 601.601 [Amended]

Par. 11. Paragraph (c) of § 601.601 is amended by revising the last sentence to read as follows:

§ 601.601 Rules and regulations.

* * * * *

(c) *Petition to change rules.* * * * However, in the case of petitions to amend the regulations pursuant to subsection (c)(4)(A)(viii) or (5)(A)(i) of section 23 or former section 44C, follow the procedure outlined in paragraph (a) of § 1.23–6.

* * * * *

OMB Control Numbers Under the Paperwork Reduction Act (26 CFR Part 602)

PART 602—[AMENDED]

Par. 12. The authority for Part 602 continues to read as follows:

Authority: 26 U.S.C. 7805.

§ 602.101 [Amended]

Par. 13 Paragraph (c) of § 602.101 is amended by inserting in the appropriate place in the table.

"§ 1.6050D–1..1545–0232".

Lawrence B. Gibbs,
Commissioner of Internal Revenue.

J. Roger Mentz,
Assistant Secretary of the Treasury.

May 15, 1987.

[FR Doc. 87–16170 Filed 7–15–87; 8:45 am]

BILLING CODE 4830-01-M

DEPARTMENT OF TRANSPORTATION

Coast Guard

33 CFR Part 100

[CGD5 87–044]

Regatta; New Jersey Offshore Grand Prix

AGENCY: Coast Guard, DOT.

ACTION: Temporary regulation with request for comments.

SUMMARY: The Coast Guard is temporarily amending the regulations in 33 CFR 100.306 for the New Jersey Offshore Grand Prix. This amendment changes the effective dates and location of the regulated area for the annual New Jersey Offshore Grand Prix. This power boat race is normally held on the third Wednesday of July off the northern New Jersey coast between Asbury Park and Seaside Park. This year the race will be held on Sunday, July 26, 1987, off the southern New Jersey coast between Absecon Inlet and Margate City.

EFFECTIVE DATE: These regulations are effective from 9:00 a.m. to 3:00 p.m., on July 26, 1987. In case of inclement weather causing the event to be postponed the regulations are effective from 9:00 a.m. to 3:00 p.m., on July 27, 1987.

ADDRESSES: Comments should be hand-delivered or mailed to: Commander (bb), Fifth Coast Guard District, Federal Building, 431 Crawford Street, Portsmouth, Virginia 23704–5004. Comments and materials referenced in this notice are available for examination and duplication in Room 209, Federal Building, 431 Crawford Street, Portsmouth, Virginia. Office hours are between 8:00 a.m. and 4:30 p.m., Monday through Friday, except holidays.

FOR FURTHER INFORMATION CONTACT: Billy J. Stephenson, Chief, Boating Affairs Branch, Fifth Coast Guard District, 431 Crawford Street, Portsmouth, Virginia 23704–5004 (804) 398–6204.

SUPPLEMENTARY INFORMATION: A Notice of Proposed Rulemaking has not been published for this regulation. Following normal rulemaking procedures would have been impractical. The application for the event was not received until May 26, 1987, and there was not sufficient time remaining to publish a proposed rule in advance of the event or to provide for a delayed effective date.

Because of the many details that needed to be worked out due to the change in the race location and date, the sponsors were unable to submit the application any earlier.

Although this regulation is published without prior notice, an opportunity for public comment is being provided to insure that the regulation is both reasonable and workable. These regulations may be altered prior to the event based on any comments that are received.

Persons wishing to comment may do so by submitting written comments to the office listed under **"ADDRESSES"** in this preamble. Commenters should include their names and addresses, identify the docket number for this regulation (CGD5 87–044), and give reasons for their remarks. Due to the limited time for comment, verbal comments may be submitted by telephone. Based upon comments received, the regulation may be changed for this and future events.

Drafting Information

The drafters of these regulations are Mr. Lucas A. Dlhopolsky, Project Officer, Third Coast Guard District Boating Safety Division and Commander Robert J. Reining, Project Attorney, Fifth Coast Guard District Legal Staff.

Discussion of Regulations

The New Jersey Offshore Grand Prix is an annual high speed power boat race held off the New Jersey coastline. Prior to 1987 the race was conducted on the Atlantic Ocean between Asbury Park and Seaside Park, New Jersey. Since the event was traditionally held each year on the same day (the third Wednesday in July) and in the same area, the Coast Guard published a permanent rule in § 100.306 of Title 33 of the Code of Federal Regulations.

This year, the sponsor moved the race location down the coast to the vicinity of Atlantic City, New Jersey and set the date for Sunday, July 26, 1987. The sponsor took this action to take advantage of the popularity of this resort area and to offer an additional recreational activity to complement the existing attractions in Atlantic City. This event is sponsored by the New Jersey Offshore Power Boat Racing Association. It is sanctioned by the American Power Boat Association and the Union of International Motorboating.

Approximately 70 power boats ranging from 18 to 50 feet in length will race in various classes over a 150 nautical mile course which extends in a somewhat flattened triangular shape between Great Egg Harbor Inlet and Absecon Inlet.

Coast Guard patrol vessels will be positioned at both inlets to direct vessels to temporary spectator anchorages or to instruct transiting vessels on how to proceed safely around the race course.

Race headquarters will be located at the Ocean Pier One in Atlantic City. Race participants will exit Absecon Inlet at approximately 10:30 a.m. on the race day. The sponsor will provide committee boats to lead the race vessels in procession to and from the race course, at speeds not to exceed 15 knots. The sponsor will provide in excess of 70 vessels who will, in conjunction with the Coast Guard and local government agencies, patrol this event.

During the race activities, the participating power boats will not be permitted to approach any closer than within 400 yards of the shore line.

The race course has been altered from that originally proposed by the sponsor, in order to avoid a popular surf clamming area, known locally as the "Golden Triangle".

The race course is contained within the regulated area that is a flattened, elongated triangle, which extends about 13 nautical miles from Great Egg Harbor Inlet northeastward along the New Jersey coastline across Absecon Inlet. One 8.5 nautical mile leg of the triangular area extends off the coast into the Atlantic Ocean. That leg is located between the Great Egg Harbor Inlet and Atlantic City, New Jersey. The regulated area extends from the shoreline out to the limits of the territorial sea (3 miles from the shoreline). In order to provide for the safety of participants, spectators and vessels transiting the area, the Coast Guard will restrict vessel movements in the regulated area and will establish temporary anchorages for what is expected to be a large spectator fleet.

In order to publicize these regulations, the Coast Guard will publish details in the Local Notice To Mariners and issue a safety voice broadcast. In addition, information about the race will be released to the local newspapers. Members of the Coast Guard Auxiliary will be present to inform vessel operators of this regulation and other applicable laws.

List of Subjects in 33 CFR Part 100

Marine safety, Navigation (water).

Temporary Regulation

In consideration of the foregoing, Part 100 of Title 33, Code of Federal Regulations is amended as follows:

PART 100—[AMENDED]

1. The authority citation for Part 100 continues to read as follows:

Authority: 33 U.S.C. 1233; 49 CFR 1.46 and 33 CFR 100.35.

2. Part 100 is amended by adding a temporary § 100.35–544 to read as follows:

§ 100.35–544 New Jersey Offshore Grand Prix.

(a) *Definitions:* (1) *Regulated Area:* The waters within a line drawn between the following points: latitude 39°18'54" North, longitude 74°30'18" West, latitude 39°17'–18" North, longitude 74°27'36" West, latitude 39°12'00" North, longitude 74°28'00" West, latitude 39°20'06" North, longitude 74°25'03" West, latitude 39°22'48" North, longitude 74°14'42" West, latitude 39°22'48" North, longitude 74°14'42" West, latitude 39°20'54" North, longitude 74°25'54" West.

(2) *Coast Guard Patrol Commander:* The Coast Guard Patrol Commander is a commissioned officer of the Coast Guard who has been designated by the Commander, Coast Guard Group Cape May.

(3) *Spectator Areas*—(i) *Absecon Inlet Spectator Area:* The waters within a line drawn between the following points: latitude 39°22'03.6" North, longitude 74°24'00" West, latitude 39°21'28.8" North, longitude 74°23'55.2" West, latitude 39°21'54" North, longitude 74°21'13.2" West, latitude 39°22'31.2" North, longitude 74°21'27.6" West.

(ii) *Great Egg Inlet Spectator Area:* The waters within a line drawn between the following points: latitude 39°18'25.2" North, longitude 74°30'16.8" West, latitude 39°17'51" North, longitude 74°30'46.8" West, latitude 39°16'36" North, longitude 74°28'53.4" West, latitude 39°17'14.4" North, longitude 74°28'16.8 West.

(b) *Effective Dates:* These regulations are effective from 9:00 a.m. to 3:00 p.m., on July 26, 1987. If inclement weather causes the postponement of the event, the regulations are effective from 9:00 a.m. to 3:00 p.m., on July 27, 1987.

(c) *Special Local Regulations:*

(1) The Coast Guard Patrol Commander may close the regulated area intermittently to general navigation during the effective period.

(2) No person or vessel may enter or remain in the regulated area while it is closed unless participating in the event or authorized by the Coast Guard Patrol Commander.

(3) The sponsor shall mark the spectator areas with vessels flying colored pennants and special flags to aid in their identification.

(4) No spectator, press, or commercial fishing boats may cross the race course

without the permission of the Coast Guard Patrol Commander.

(5) Vessels wishing to cross the race course may obtain permission from the Coast Guard Patrol Commander by contacting the nearest Coast Guard patrol vessel.

(6) The sponsor shall provide a sufficient number of committee boats to lead the participating race boats from their berthing location to and from the regulated area, at speeds under 15 knots, as directed by the Coast Guard Patrol Commander.

(7) Any race boat registered to participate in this event that fails to adhere to this requirement shall be disqualified from that day's races.

(8) Participating race boats may not come within 400 yards of the shoreline while they are in the regulated area.

(9) No vessel may exit the Absecon Inlet without first checking with the Coast Guard patrol vessel stationed at the Absecon Inlet Lighted Buoy No. 2 (Light List No. 37590).

(10) No vessel may exit the Great Egg Harbor Inlet without first checking with the Coast Guard patrol vessel stationed at the Great Egg Harbor Inlet Outer Lighted Whistle Buoy "GE" (Light List No. 37670).

(11) Vessels may anchor in the spectator areas after being instructed where they may anchor within the area by the Coast Guard patrol vessels stationed at the aids to navigation described in paragraphs (d) (9) and (10) of this section. Vessels must anchor in the locations designated by the Coast Guard patrol vessel.

(12) Vessels coming in from sea towards the Absecon and Great Egg Harbor Inlets shall comply with any orders issued by a Coast Guard commissioned, warrant, or petty officer on board a vessel displaying the Coast Guard ensign.

(13) All persons and vessels within the regulated and spectator areas shall comply with the instructions of a Coast Guard commissioned, warrant, or petty officer on board a vessel displaying the Coast Guard ensign.

(14) Any operator of a vessel who hears five or more blasts from a U.S. Coast Guard vessel shall stop the vessel immediately and proceed as directed.

Dated: July 2, 1987.

A.D. Breed,

Rear Admiral, U.S. Coast Guard, Commander, Fifth Coast Guard District.

[FR Doc. 87-16169 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-14-M

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33 CFR Parts 100 and 165

[CGD 87-047]

Safety and Security Zones; Temporary Rules Issued

AGENCY: Coast Guard, DOT.

ACTION: Notice of temporary rules issued.

SUMMARY: This document gives notice of temporary safety zones, security zones, and specal local regulations. Periodically the Coast Guard must issue safety zones, security zones, and special local regulations for limited periods of time in limited areas. Safety Zones are established around areas where there has been a marine casualty or when a vessel carrying a particularly hazardous cargo is transiting a restricted or congested area. Security zones are temporarily established in response to a risk to national security present in a particular area. Special local regulations are issued to assure the safety of participants and spectators of regattas and other marine events.

DATES: The following list includes safety zones, security zones, and special local regulations that were established between April 1, 1987, and June 30, 1987, and have since been terminated. Also included are several zones established earlier but inadvertently omitted from the last published list.

ADDRESS: The complete text of any temporary regulations may be examined at, and is available on request from, Executive Secretary, Marine Safety Council (G-CMC), U.S. Coast Guard Headquarters, 2100 Second Street, SW., Washington, DC 20593-0001.

FOR FURTHER INFORMATION CONTACT: Mr. Bruce Novak, Deputy Executive Secretary, Marine Safety Council at (202) 267-1477.

SUPPLEMENTARY INFORMATION: The local Captain of the Port must be immediately responsive to the safety needs of the waters within his jurisdiction; therefore, he has been delegated the authority to issue these regulations. Since Marine events and emergencies usually take place without advance notice or warning, timely publication of notice in the **Federal Register** is often precluded. However, the affected public is informed through Local Notices to Mariners, press releases, and other means. Moreover, actual notification is frequently provided by Coast Guard patrol vessels enforcing the restrictions imposed in the zone to keep the public informed of the regulatory activity. Because mariners are notified by Coast Guard officials on scene prior to enforcement action, **Federal Register** notice is not required to place the special local regulations, security zone, or safety zone in effect. However, the Coast Guard, by law, must publish in the **Federal Register** notice of substantive rules adopted. To discharge this legal obligation without imposing undue expense on the public, the Coast Guard publishes a periodic list of these temporary special local regulations, security zones, and safety zones. Permanent safety zones are not included in this list. Permanent zones are published in their entirety in the **Federal Register** just as any other rulemaking. Temporary zones are also published in their entirety if sufficient time is available to do so before they are placed in effect or terminated.

Non-major safety zones, special local regulations, and security zones have been exempted from review under E.O. 12291 because of their emergency nature and temporary effectiveness.

The following regulations were placed in effect temporarily during the period April 1, 1987, through June 30, 1987, unless otherwise indicated:

Docket Number	Location	Type	Date
1-87-11	Agawam, MA	Special Local Regulation	30 May 87
1-87-15	Hempstead Harbor, RI	Safety Zone	22 May 87
1-87-16	Hudson River, Poughkeepsie, NY	Safety Zone	7 June 87
COTP Providence, RI, Reg. 87-05	Rhode Island Sound	Safety Zone	18 March 87
COTP Providence, RI, Reg. 87-06	Rhode Island Sound	Safety Zone	16 April 87
COTP Providence, RI, Reg. 87-07	Rhode Island Sound	Safety Zone	18 April 87
COTP Providence, RI, Reg. 87-12	Rhode Island Sound	Safety Zone	11 May 87
COTP Providence, RI, Reg. 87-13	Rhode Island Sound	Safety Zone	16 May 87
2-87-02	Ohio River, Mile 604	Special Local Regulation	28 April 87
COTP Memphis, TN, Reg. 87-01	Arkansas River, Mile 48	Safety Zone	15 April 87
COTP Memphis, TN, Reg. 87-02	L. Mississippi River, Mile 235	Safety Zone	23 April 87
COTP Memphis, TN, Reg. 87-03	Arkansas River, Mile 48	Safety Zone	22 April 87
COTP Memphis, TN, Reg. 97-04	Arkansas River, Mile 118	Safety Zone	24 May 87
COTP Memphis, TN, Reg. 87-05	L. Mississippi River, Mile 734.5	Safety Zone	6 June/30 May 87
COTP Louisville, KY, Reg. 87-04	Ohio River, Mile 602	Safety Zone	27 June 87
COTP Louisville, KY, Reg. 87-06	Ohio River, Mile 482.5	Safety Zone	27 June 87

Docket Number	Location	Type	Date
COTP Nashville, TN, Reg. 87-01	Tennessee River, Mile 134.4	Safety Zone	9 April 87
COTP Huntington, WV, Reg. 87-01	Ohio River, Mile 355.0	Safety Zone	9 April 87
COTP Huntington, WV, Reg. 87-02	Kanawha River, Mile 68	Safety Zone	25 April 87
COTP Huntington, WV, Reg. 87-03	Kanawha River, Mile 49	Safety Zone	14 June 87
COTP Huntington, WV, Reg. 87-04	Ohio River, Mile 305	Safety Zone	24 May 87
COTP Huntington, WV, Reg. 87-05	Kanawha River, Mile 59	Safety Zone	31 May 87
COTP Pittsburgh, PA, Reg. 87-01	Ohio, Monongahela & Allegheny River, Mile 0.0	Safety Zone	11 April 87
COTP Pittsburgh, PA, Reg. 87-02	Monongahela River, Mile 0.2	Safety Zone	10 June 87
COTP Pittsburgh, PA, Reg. 87-03	Monongahela River, Mile 8	Safety Zone	22 June 87
COTP Pittsburgh, PA, Reg. 87-04	Ohio River, Mile 39.5	Safety Zone	27 June 87
COTP St. Louis, MO, Reg. 87-01	Missouri River, Mile 359	Safety Zone	27 April 87
COTP St. Louis, MO, Reg. 87-02	Mississippi River, Mile 664.5	Safety Zone	1 May 87
COTP St. Louis, MO, Reg. 87-03	Mississippi River, Mile 177	Safety Zone	25 May 87
COTP St. Louis, MO, Reg. 87-04	Mississippi River, Mile 827	Safety Zone	13 June 87
2-87-03	Mississippi River, Mile 738.5	Special Local Regulation	9 May 87
3-87-14	Upper New York Bay	Security Zone	3 May 87
COTP Baltimore, MD, Reg. 87-01	Upper Chesapeake Bay	Safety Zone	29 May 87
COTP Wilmington, NC, Reg. 87-3	Beaufort Inlet, NC	Safety Zone	30 April 87
COTP Wilmington, NC, Reg. 87-04	Beaufort Inlet, NC	Safety Zone	30 April 87
COTP Wilmington, NC, Reg. 87-05	Beaufort Inlet, NC	Safety Zone	1 May 87
COTP Wilmington, NC, Reg. 87-06	Cape Fear Memorial Bridge	Safety Zone	22 June 87
COTP Hampton Roads, VA, Reg. 87-11	Chesapeake Bay, Lynnhaven Roads	Safety Zone	12 April 87
COTP Hampton Roads, VA, Reg. 87-12	Chesapake Bay, Hampton Roads	Safety Zone	25 April 87
COTP Hampton Roads, VA, Reg. 87-14	James River, Newport News, VA	Safety Zone	13 June 87
COTP Hampton Roads, VA, Reg. 87-15	S. Elizabeth River, Hampton Roads	Safety Zone	1 June 87
COTP Hampton Roads, VA, Reg. 87-16	Chesapeake Bay, Hampton Roads	Safety Zone	2 June 87
COTP Hampton Roads, VA, Reg. 87-17	S. Elizabeth River, Hampton Roads	Safety Zone	4 June 87
COTP Hampton Roads, VA, Reg. 87-20	S. Elizabeth River, Hampton Roads	Safety Zone	2 June 87
COTP Baltimore, MD, Reg. 87-02	Baltimore Harbor	Security Zone	29 May 87
5-87-03	Neuse River, New Bern, NC	Special Local Regulation	20 June 87
5-87-04	Willoughby Bay, Norfolk Harbor	Special Local Regulation	25 April 87
5-87-08	Wicomico River Salisbury, MD	Special Local Regulation	2 May 87
5-87-10	Elizabeth River, Norfolk, VA	Special Local Regulation	11 April 87
5-87-17	Inner Harbor, Baltimore, MD	Special Local Regulation	16 May 87
5-87-18	Severn River, Annapolis, MD	Special Local Regulation	17 May 87
5-87-19	Chesapeake Bay Bridge	Special Local Regulation	14 June 87
5-87-24	Delaware River, Camden, NJ	Special Local Regulation	29 May 87
5-87-30	Barnagat Bay, Toms River, NJ	Special Local Regulation	6 June 87
5-87-37	Baltimore Inner Harbor	Special Local Regulation	13 June 87
5-87-50	Cape May, NJ	Special Local Regulation	27 June 87
COTP Charleston, SC, Reg. 87-165.T2487	Ashley River, Middleton Place Plantation	Safety Zone	7 June 87
COTP Miami, FL, Reg. 87-13	Intracoastal Waterway, Ft. Lauderdale, FL	Safety Zone	15 April 87
7-87-09	Marathon, FL Offshore Challenge	Special Local Regulation	25 April 87
7-87-10	West Palm Beach, FL	Special Local Regulation	2 May 87
7-87-14	South Biscayne Bay	Special Local Regulation	17 May 87
COTP Mobile, AL, Reg. 87-01	Panama City Beach, FL	Safety Zone	10 March 87
COTP Mobile, AL, Reg. 87-05	Mobile River, Mile 4	Safety Zone	4 May 87
COTP Mobile, AL, Reg. 87-06	Tombigbee River, Mile 191	Safety Zone	9 June 87
COTP Corpus Christi, TX, Reg. 87-03	Corpus Christi Bay, TX	Safety Zone	7 May 87
COTP New Orleans, LA, Reg. 87-01	Gulf Intracoastal Waterway, Mile 103	Safety Zone	13 March 87
COTP Houston, TX, Reg. 87-002	Houston Ship Channel	Safety Zone	4 March 87
COTP Houston, TX, Reg. 87-003	Galveston Bay, Bayport Channel	Safety Zone	24 March 87
COTP Port Arthur, TX, Reg. 87-01	Gulf Intracoastal Waterway, Mile 225	Safety Zone	29 January 87
COTP Galveston, TX, Reg. 87-01	Galveston, TX	Security Zone	18 April 87
8-87-02	Lake Pontchartrain, LA	Special Local Regulation	6 June 87
8-87-03	Pascagoula River, L & N Bridge	Special Local Regulation	31 May 87
8-87-04	Biloxi Inner Harbor	Special Local Regulation	7 June 87
9-87-03	Maumee River	Special Local Regulation	23 May 87
9-87-04	Sandusky Bay, Lake Erie	Special Local Regulation	30 May 87
9-87-10	Detroit River, Detroit, MI	Special Local Regulation	23 June 87
COTP San Diego, CA, Reg. 87-08	San Diego Bay, CA	Safety Zone	18 April 87
COTP San Diego, CA, Reg. 87-09	San Diego Bay, CA	Safety Zone	27 April 87
COTP San Diego, CA, Reg. 87-10	San Diego Bay, CA	Safety Zone	21 June 87
COTP LA/LB, CA, Reg. 87-03	Ports of Los Angeles/Long Beach	Safety Zone	5 June 87
COTP LA/LB, CA, Reg. 87-05	GATX & Texaco Terminals	Safety Zone	8 April 87
COTP LA/LB, CA, Reg. 87-06	Ports of Los Angeles/Long Beach	Safety Zone	21 April 87
COTP LA/LB, CA, Reg. 87-07	Anaheim Bay, CA	Safety Zone	23 April 87
COTP LA/LB, CA, Reg. 87-08	Long Beach Explosive Loading Anchorage K-4	Safety Zone	11 May 87
COTP LA/LB, CA, Reg. 87-09	Long Beach Explosive Loading Anchorage K-4	Safety Zone	26 May 87
COTP LA/LB, CA, Reg. 87-10	Los Angeles River	Safety Zone	4 June 87
11-87-02	Colorado River	Safety Zone	27 June 87
COTP San Francisco, CA, Reg. 87-05	Oakland Inner Harbor	Safety Zone	23 May 87
COTP San Francisco, CA, Reg. 87-07	San Francisco Bay	Safety Zone	24 May 87
13-87-01	Lake Washington, Seattle, WA	Special Local Regulation	1 May 87
13-87-02	Union Bay, Portage Bay & Lake Washington	Special Local Regulation	2 May 87
13-87-03	Elliott Bay, Puget Sound	Special Local Regulation	16 May 87

Dated: July 13, 1987.

J.J. Smith,

Executive Secretary, Marine Safety Council.

[FR Doc. 87-16167 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-14-M

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33 CFR Part 117

[CGD7 87-26]

Drawbridge Operation Regulations; Atlantic Intracoastal Waterway, Eau Gallie, FL

AGENCY: Coast Guard, DOT.

ACTION: Final rule.

SUMMARY: This amendment revokes the regulations for the Eau Gallie swingspan drawbridge, mile 914.4, at Eau Gallie, Florida, because the bridge has been removed. Notice and public procedure have been omitted from this action due to the removal of the bridge concerned.

EFFECTIVE DATE: This rule becomes effective on July 16, 1987.

FOR FURTHER INFORMATION CONTACT: Mr. Wayne Lee, Chief, Bridge Section, Seventh Coast Guard District, telephone (305) 536–4103.

SUPPLEMENTARY INFORMATION:

Drafting Information

The drafters of this rule are Mr. Walt Paskowsky, Bridge Administration Specialist, project officer, and Lieutenant Commander S.T. Fuger, Jr., project attorney.

This action has no economic consequences. It merely revokes regulations that are now meaningless because they pertain to a drawbridge that no longer exists. Consequently, this action is considered to be non-major under Executive Order 12291 and nonsignificant under Department of Transportation regulatory policies and procedures (44 FR 11034, February 26, 1979). Since there is no economic impact, a full regulatory evaluation is unnecessary. Because no notice of proposed rulemaking is required under 5 U.S.C. 553, this action is exempt from the Regulatory Flexibility Act (5 U.S.C. 605(b)). However, this action will not have a significant economic impact on a substantial number of small entities.

List of Subjects in 33 CFR Part 117

Bridges.

In consideration of the foregoing, Part 117 of Title 33, Code of Federal Regulations, is amended as follows:

PART 117—DRAWBRIDGE OPERATION REGULATIONS

1. The authority citation for Part 117 continues to read as follows:

Authority: 33 U.S.C. 499; 49 CFR 1.46; 33 CFR 1.05–1(g).

§ 117.261 [Amended]

2. Section 117.261(m) is removed.

Dated: July 2, 1987.

M. J. O'Brien,

Captain, U.S. Coast Guard, Commander, Seventh Coast Guard District, Acting.

[FR Doc. 87–16166 Filed 7–15–87; 8:45 am]

BILLING CODE 4910-14-M

PENNSYLVANIA AVENUE DEVELOPMENT CORPORATION

36 CFR Part 902

Freedom of Information Reform Act of 1986; Fee Schedule and Guidelines for Waivers or Reductions of Fees

AGENCY: Pennsylvania Avenue Development Corporation (PADC).

ACTION: Final rule.

SUMMARY: This final rule implements the Freedom of Information Act of 1986 (Pub. L. 99–570) as it relates to requests for PADC records. This rule supplements existing guidelines on fee criteria applicable to certain requests and on waiver and reduction of such fees. The fee criteria substantially conforms to the Uniform Freedom of Information Act Fee Schedule and Guidelines published by the Office of Management and Budget in 52 FR 10012 (March 27, 1987).

EFFECTIVE DATE: August 17, 1987.

FOR FURTHER INFORMATION CONTACT: Talbot J. Nicholas II, Attorney, Pennsylvania Avenue Development Corporation, 202/724–9088.

SUPPLEMENTARY INFORMATION: PADC published this rule for comment on April 24, 1987 (52 FR 13722). No comments were received. Pursuant to section 605(b) of the Regulatory Flexibility Act (Pub. L. 96–354, 5 U.S.C. 601, *et seq.)*, I hereby certify that this final rule will not have a significant economic impact on a substantial number of small entities. The final rule does not constitute a "major rule" under Executive Order 12291.

List of Subjects in 36 CFR Part 902

Freedom of information.

For the reasons set out in the preamble, 36 CFR Part 902 is amended as follows:

PART 902—FREEDOM OF INFORMATION ACT

1. The authority citation for 36 CFR Part 902 is revised to read as follows:

Authority: 5 U.S.C. 552; 52 FR 10012–10019 (March 27, 1987).

2. Section 902.80(b) of Chapter IX of Title 36 of the CFR is revised to read as follows:

§ 902.80 General.

* * * * *

(b) A fee shall not be charged for time spent in resolving legal or policy issues.

3. Section 902.81 of the Code of Federal Regulations is revised to read as follows:

§ 902.81 Payment of fees.

The fees prescribed in this part may be paid in cash or by check, draft, or postal money order made payable to the Pennsylvania Avenue Development Corporation.

4. Section 902.82 of Chapter IX of Title 36 of the Code of Federal Regulation is revised to read as follows:

§ 902.82 Fee schedule.

(a) *Definitions.* For purposes of this section—

(1) A "commercial use request" is a request from or on behalf of one who seeks information for a use or purpose that furthers the commercial, trade, or profit interests of the requester or the person on whose behalf the request is made. In determining whether a requester properly belongs in this category, the Corporation will determine the use to which the requester will put the records sought. Where the Corporation has reasonable cause to doubt the use to which a requester will put the records sought, or where that use is not clear from the request itself, the Corporation will seek additional clarification before assigning the request to a specific category.

(2) "Direct costs" means those expenditures the Corporation actually incurs in searching for and duplicating (and in the case of commercial requesters, reviewing) records to respond to an FOIA request. Direct costs include, for example, the salary of the employee performing work (the basic rate of pay for the employee plus 16 percent of that rate to cover benefits) and the cost of operating duplicating machinery. Not included in direct costs are overhead expenses such as costs of space, and heating or lighting the facility in which the records are stored.

(3) "Duplication" means the process of making a copy of a record necessary to respond to an FOIA request. Such copies can take the form of paper copy, microform, audio-visual materials, or machine-readable documentation (e.g., magnetic tape or disk), among others. The copy provided must be in a form that is reasonably usable by requesters.

(4) "Educational institution" means a preschool, a public or private elementary or secondary school, an institution of graduate higher education, an institution of undergraduate higher education, an institution of professional education, and an institution of vocational education, which operates a program or programs of scholarly research.

(5) "Non-commercial scientific institution" means an institution that is not operated on a "commercial" basis, within the meaning of paragraph (a)(1) of this section and that is operated solely for the purpose of conducting scientific research, the results of which are not intended to promote any particular product or industry.

(6) "Representative of the new media" means any person actively gathering news for an entity that is organized and operated to publish or broadcast news to the public. The term "news" means information that is about current events or that would be of current interest to

the public. Examples of new media entities include television or radio stations broadcasting to the public at large, and publishers of periodicals (but only in those instances when they can qualify as disseminators of "news") who make their products available for purchase or subscription by the general public. These examples are not intended to be all-inclusive. Moreover, as traditional methods of news delivery evolve (e.g., electronic dissemination of newspapers through telecommunications services), such alternative media would be included in this category. "Freelance" journalists may be regarded as working for a news organization if they can demonstrate a solid basis for expecting publication through that organization, even though not actually employed by it. A publication contract would be the clearest proof, but the Corporation may also look to the past publication record of a requester in making this determination.

(7) "Review" means the process of examining records located in response to a request that is for a commercial use (see paragraph (a)(1) of this section) to determine whether any portion of any record located is permitted to be withheld. It also includes processing any records for disclosure, e.g., doing all that is necessary to excise them and otherwise prepare them for release. Review does not include time spent resolving general legal or policy issues regarding the application of exemptions.

(8) "Search" includes all time spent looking for material that is responsive to a request, including page-by-page or line-by-line identification of material within records. A line-by-line search will not be conducted when merely duplicating an entire record would be the less expensive and quicker method of complying with the request. "Search" does not include "review" of material to determine whether the material is exempt from disclosure (see paragraph (a)(7) of this section). Searches may be done manually or by computer using existing programming.

(b) The following provisions shall apply with respect to services rendered to the public in processing requests for disclosure of the Corporation's records under this Part:

(1) *Fee for duplication of records:* $0.25 per page. When the Corporation estimates that duplication charges are likely to exceed $25.00, it will notify the requester of the estimated amount of fees, unless the requester has indicated in advance his willingness to pay fees as high as those anticipated. The Corporation will offer the requester the opportunity to confer with the Corporation's staff in order to reformulate the request to meet the requester's needs at a lower cost.

(2) *Search and review fees.* (i) Searches for records by clerical personnel: $7.00 per hour, including the time spent searching for and copying any records.

(ii) Search for and review of records by professional and supervisory personnel: $11.50 per hour spent searching for any record or reviewing any record to determine whether it may be disclosed, including time spent in copying any record.

(iii) Except for requests seeking records for a commercial use, the Corporation will provide the first 100 pages of duplication and the first two hours of search time without charge. The word "pages" means paper copies of a standard size, either 8½" by 11" or 14" by 14".

(3) *Duplication of architectural drawings, maps, and similar materials:* (per copy) $10.00.

(4) *Reproduction of 35 mm slides:* (per copy) $1.00.

(5) *Reproduction of enlarged, black and white photographs:* (per copy) $10.00.

(6) *Reproduction of enlarged color photographs:* (per copy) $17.00.

(7) *Certification and validation fee:* $1.75 for each certification or validation of a copy of any record.

(8) *Categories of FOIA requesters and fees to be charged*—(i) *Commercial use requesters.* When the Corporation receives a request for records for commercial use, it will assess charges to recover the full direct costs of searching for, reviewing for release, and duplicating the records sought. Requesters must reasonably describe the records sought.

(ii) *Educational and non-commercial scientific institution requesters.* The Corporation shall provide copies of records to requesters in this category for the cost of reproduction alone, excluding charges for the first 100 pages. To be eligible for inclusion in this category, requesters must show that the request is being made as authorized by and under the auspices of a qualifying institution and that the records are not sought for a commercial use but are sought in furtherance of scholarly (if the request is from an educational institution) or scientific (if the request is from a non-commercial scientific institution) research. Requesters must reasonably describe the records sought.

(iii) *Requesters who are representatives of the news media.* The Corporation shall provide documents to requesters in this category for the cost of reproduction alone, excluding charges for the first 100 pages. To be eligible for inclusion in this category, a requester must meet the criteria in the definition of "representative of the news media" in paragraph (a)(6) of this section, and his or her request must not be made for a commercial use. In reference to this class of requester, a request for records supporting the news dissemination function of the requester shall not be considered to be a request that is for a commercial use. Requestors must reasonably describe the records sought.

(iv) *All other requesters.* The Corporation will charge requesters who do not fit into any of the categories above fees which recover the full reasonable direct cost of searching for and reproducing records that are responsive to the request, except that the first 100 pages of reproduction and the first two hours of search time shall be furnished without charge. Requests from record subjects for records about themselves filed in the Corporation's systems of records will be treated under the fee provisions of the Privacy Act of 1974 which permit fees only for reproduction. Requesters must reasonably describe the records sought.

(9) *Interest.* In the event a requester fails to remit payment of fees charged for processing a request under this part within 30 days from the date such fees were billed, interest on such fees may be assessed beginning on the 31st day after the billing date at the rate prescribed in section 3717 of Title 31, U.S.C., and will accrue from the date of the billing.

(10) *Unsuccessful searches.* Except as provided in paragraph (b)(8)(iv) of this section, the cost of searching for a requested record shall be charged even if the search fails to locate such record or it is determined that the record is exempt from disclosure.

(11) *Aggregating requests.* A requester must not file multiple requests at the same time, each seeking portions of a record or records, solely in order to avoid payment of fees. When the Corporation reasonably believes that a requester, or a group of requesters acting in concert, is attempting to break a request down into a series of requests for the purpose of evading the assessment of fees, the Corporation may aggregate any such requests and charge accordingly.

(12) *Advance payments.* The Corporation will not require a requester to make an advance payment, i.e., payment before work is commenced or continued on a request unless:

(i) The Corporation estimates or determines that allowable charges that a requester may be required to pay are likely to exceed $250; or

(ii) If a requester has previously failed to make timely payments (i.e., within 30 days of billing date) of fees charged under this part, the requester may be required to pay the full amount owed plus any applicable interest accrued thereon or demonstrate that he has, in fact, paid the fee, and to make an advance payment of the full amount of the estimated fee before the Corporation begins to process a new request or a pending request from this requester.

(iii) With regard to any request coming within paragraphs (b)(12) (i) and (ii) of this section, the administrative time limits set forth in §§ 902.60, 902.61, and 902.62 of this part will begin to run only after the Corporation has received the requisite fee payments.

(iv) *Non-payment:* In the event of nonpayment of billed charges for disclosure of records, the provisions of the Debt Collection Act of 1982 (Pub. L. 97–365), including disclosure to consumer credit reporting agencies and referral to collection agencies, where appropriate, may be utilized to obtain payment.

5. Section 902.83 of Chapter IX of Title 36 of the CFR is revised to read as follows:

§ 902.83 Waiver or reduction of fees.

Fees otherwise chargeable in connection with a request for disclosure of a record shall be waived or reduced where:

(a) Disclosure of the information is in the public interest because it is likely to contribute significantly to public understanding of the operations or activities of the government and is not primarily in the commercial interest of the requester; or

(b) The costs of routine collection and processing of the fee are likely to equal or exceed the amount of the fee.

M.J. Brodie,
Executive Director.

[FR Doc. 87–16145 Filed 7–15–87; 8:45 am]

BILLING CODE 7630-01-M

FEDERAL EMERGENCY MANAGEMENT AGENCY

44 CFR Part 64

[Docket No. FEMA 6757]

Suspension of Community Eligibility

AGENCY: Federal Emergency Management Agency, FEMA.

ACTION: Final rule.

SUMMARY: This rule lists communities, where the sale of flood insurance has been authorized under the National Flood Insurance Program (NFIP), that are suspended on the effective dates listed within this rule because of noncompliance with the floodplain management requirements of the program. If FEMA receives documentation that the community has adopted the required floodplain management measures prior to the effective suspension date given in this rule, the suspension will be withdrawn by publication in the **Federal Register.**

EFFECTIVE DATES: The third date ("Susp.") listed in the fourth column.

FOR FURTHER INFORMATION CONTACT: Frank H. Thomas, Assistant Administrator, Office of Loss Reduction, Federal Insurance Administration, (202) 646–2717, Federal Center Plaza, 500 C Street, Southwest, Room 416, Washington, DC 20472.

SUPPLEMENTARY INFORMATION: The National Flood Insurance Program (NFIP), enables property owners to purchase flood insurance at rates made reasonable through a Federal subsidy. In return, communities agree to adopt and administer local floodplain management measures aimed at protecting lives and new construction from future flooding. Section 1315 of the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4022), prohibits flood insurance coverage as authorized under the National Flood Insurance Program (42 U.S.C. 4001 through 4128) unless an appropriate public body shall have adopted adequate floodplain management measures with effective enforcement measures. The communities listed in this notice no longer meet that statutory requirement for compliance with program regulations (44 CFR Part 59 *et. seq.*). Accordingly, the communities will be suspended on the effective date in the fourth column. As of that date, flood insurance will no longer be available in the community. However, some of these communities may adopt and submit the required documentation of legally enforceable floodplain management measures after this rule is published but prior to the actual suspension date. These communities will not be suspended and will continue their eligibility for the sale of insurance. A notice withdrawing the suspension of the communities will be published in the **Federal Register.** In the interim, if you wish to determine if a particular community was suspended on the suspension date, contact the appropriate FEMA Regional Office or the NFIP servicing contractor.

In addition, the Federal Emergency Management Agency has identified the special flood hazard areas in these communities by publishing a Flood Hazard Boundary Map. The date of the flood map, if one has been published, is indicated in the fifth column of the table. No direct Federal financial assistance (except assistance pursuant to the Disaster Relief Act of 1974 not in connection with a flood) may legally be provided for construction or acquisition of buildings in the identified special flood hazard area of communities not participating in the NFIP and identified for more than a year, on the Federal Emergency Management Agency's initial flood insurance map of the community as having flood-prone areas. (Section 202(a) of the Flood Disaster Protection Act of 1973 (Pub. L. 93–234) as amended). This prohibition against certain types of Federal assistance becomes effective for the communities listed on the date shown in the last column.

The Administrator finds that notice and public procedure under 5 U.S.C. 553(b) are impracticable and unnecessary because communities listed in this final rule have been adequately notified. Each community receives a 6-month, 90-day, and 30-day notification addressed to the Chief Executive Officer that the community will be suspended unless the required floodplain management measures are met prior to the effective suspension date. For the same reasons, this final rule may take effect within less than 30 days.

Pursuant to the provisions of 5 U.S.C. 605(b), the Administrator, Federal Insurance Administration, FEMA, hereby certifies that this rule if promulgated will not have a significant economic impact on a substantial number of small entities. As stated in section 2 of the Flood Disaster Protection Act of 1973, the establishment of local floodplain management together with the availability of flood insurance decreases the economic impact of future flood losses to both the particular community and the nation as a whole. This rule in and of itself does not have a significant economic impact. Any economic impact results from the community's decision not to (adopt) (enforce) adequate floodplain mangement, thus placing itself in noncompliance of the Federal standards required for community participation. In each entry, a complete chronology of effective dates appears for each listed community.

List of Subjects in 44 CFR Part 64

Flood insurance—floodplains

PART 64—(AMENDED)

1. The authority citation for Part 64 continues to read as follows:

Authority: 42 U.S.C. 4001 *et.seq.*, Reorganization Plan No. 3 of 1978, E.O. 12127.

2. Section 64.6 is amended by adding in alphabetical sequence new entries to the table.

§ 64.6 List of Eligible Communities.

State	Location	Community No.	Effective dates of authorization/cancellation of sale of flood insurance in community	Current effective map data	Date[1]
Region II					
New York	Amityville, village of, Suffolk County	360788	Oct. 20, 1972, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Babylon, village of, Suffolk County	360791	Jan. 19, 1973, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Crown Point, town of, Essex County	361148	Mar. 12, 1976, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Lindenhurst, village of, Suffolk County	360798	Apr. 11, 1973, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Port Henry, village of, Essex County	361493	Nov. 12, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Region III					
Virginia	Alleghany County, unincorporated areas	510009	Feb. 22, 1974, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Region V					
Michigan	Niles, city of, Cass and Berrien Counties	260040	Jan. 16, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Ohio	Dover, city of, Tuscarawas County	390543	May 27, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Region VI					
Arkansas	Montgomery County, unicorporated areas	050453	Apr. 23, 1976, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Stone County, unincorporated areas	050465	Jan. 28, 1983, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Oklahoma	Inola, town of, Rogers County	40056	Apr. 21, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987
Do	Pryor Creek, city of, Mayes County	40017	Apr. 21, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Texas	Highland Village, city of, Denton County	481105	July 16, 1978, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Plum Grove, city of, Liberty County	481269	June 1, 1976, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Region IX					
California	Contra Costa County, unincorporated areas	060025	Nov. 4, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Loma Linda, city of, San Bernardino County	060025	Mar. 19, 1971 Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Region IV, Minimal Conversions					
Kentucky	Hickman, city of, Fulton County	210077	July 13, 1979, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Region V					
Illinois	Kirkwood, village of, Warren County	170675	July 28, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Michigan	Elsie, village of, Clinton County	260725	May 28, 1982, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Morley, village of, Mecosta County	260585	Oct. 12, 1976, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Wisconsin	Hammond, village of, St. Croix County	550382	Oct. 23, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Mineral Point, city of, Iowa County	550180	July 25, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Nekoosa, city of, Wood County	550516	May 16, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.
Do	Waldo, village of, Sheboygan County	550432	June 11, 1975, Emerg. May 1, 1987, Reg. May 1, 1987, Susp.	July 16, 1987	July 16, 1987.
Region VII					
Kansas	Norton, city of, Norton County	200248	July 11, 1975, Emerg. July 16, 1987, Reg. July 16, 1987, Susp.	July 16, 1987	July 16, 1987.

[1] Date certain Federal assistance no longer available in special flood hazard areas.

Code for reading fourth column: Emerg.—Emergency; Reg.—Regular; Susp.—Suspension.

Harold T. Duryee,
Administrator, Federal Insurance Administration.

[FR Doc. 87-16102 Filed 7-15-87; 8:45 am]

BILLING CODE 6718-03-M

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 1, 61 and 69

[CC Docket No. 86-467; FCC 87-186]

Regulation of Small Telephone Companies

AGENCY: Federal Communications Commission (FCC).

ACTION: Final rule.

SUMMARY: This action adopts rules to reduce the administrative and regulatory burdens on small telephone companies. In this action the Commission determines that the tariff filing burdens affecting small telephone companies using actual historical cost and demand data to set rates were no longer warranted. The Commission determines that rates filed by small companies using actual data would be more accurate and would not present the concern that the rates filed would exceed authorized return levels. Accordingly, by this action, the Commission reduces the frequency of required tariff filings for small companies using historical data, and eliminates the data filing requirements and the liability for automatic refunds established in Docket 86-125.

EFFECTIVE DATE: January 1, 1988.

ADDRESSES: Federal Communications Commission, 1919 M Street NW., Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Jacqueline E. Holmes, Tariff Division, Common Carrier Bureau, (202) 632-6917 or Dan Grosh, (202) 632-6387.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Memorandum Opinion and Order, CC Docket No. 86-467. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's Copy Contractor, International Transcription Service, (202) 857-3800, 2100 M Street NW., Suite 140, Washington, DC 20037. The collection of information requirement contained in this rule has been submitted to the Office of Management and Budget (OMB) for review under section 3504(h) of the Paperwork Reduction Act. OMB has approved the collection of information requirement contained in this rule. The OMB control number for this information collection requirement is 3060-0298.

Summary of Order

1. On February 18, 1986 the United States Telephone Association (USTA) filed a Petition for Rulemaking (USTA Petition) which requested that the Commission institute a rulemaking proceeding to reduce the administrative and regulatory burdens on small telephone companies and to amend Part 61 of the Commission's Rules, especially with regard to the tariff support provisions in § 61.38 of the Commission's Rules, 47 CFR 61.38, as applied to interstate access tariffs.

2. By a Notice of Proposed Rulemaking (Notice) released December 12, 1986, the Commission commenced rulemaking proceedings proposing that small local exchange carriers' (LECs) tariff filings would be presumptively lawful, could be filed on 14 days' notice and need not be accompanied by extensive economic cost support data.

3. The Commission's present rules allow small telephone companies to avoid all direct access tariff filing burdens by participating in the voluntary costs and revenue pools associated with the access tariff filed by the National Exchange Carrier Association (NECA). NECA calculates and files rates based on overall pool costs of over 1200 local companies, who in turn share in pool revenues in proportion to their costs. The Commission reviews the NECA rates as it does rates in other access tariffs.

4. In the Notice, the Commission proposed rules which would permit small companies to qualify for reduced regulation if rates filed in the first year use the amount of the company's most recent settlement from the NECA pool or the company's most recent cost study. In subsequent filings small companies would be required to propose rates using the company's most recent cost study, most recent average schedule settlement, or the most recent average schedule rate developed by NECA.

5. In this Order, the Commission determines that these rules are both rate neutral, since the rates are based on the company's own costs, and pooling neutral, neither encouraging nor discouraging participation in the NECA pools. Carriers that choose voluntarily to file their own interstate access tariffs under the rules the Commission adopts here may use past demand to set access rates. This will further reduce tariff filing burdens since the carriers will not be required to project figures into the future period in which the rates will be in effect.

6. Because both the cost and demand figures must be actual figures, the issues presented by such filings should be greatly reduced. Although the rates will be somewhat inaccurate, because they will not immediately reflect changed circumstances, filings for the next period should correct any rate distortion. Rates based on historical costs and demand or average schedules also do not present the concern that the rates could exceed the allowed rate of return because of faulty projections. Subsequent filings based upon current costs and demand, or revised average schedules, should automatically correct the rates. Therefore, under these rules, for small companies which use actual past period cost and demand figures or average schedules to compute access tariffs, rates will be considered *prima facie* reasonable and will not be suspended absent a substantial showing that the rates are unreasonable, that there would not be any practical or sufficient opportunity to correct the unreasonable rates in subsequent filing, and that irreparable injury would result.

7. Also by these rules, the Commission has eliminated the data filing requirements and the liability for automatic refunds established in Docket 84-800 for small companies that use historical data to establish rates. In addition, the rules adopted by this Order allow small companies to reduce the burdens of filing tariff terms and conditions. By these rules NECA is directed to file a simplified access tariff for small carriers which would contain only tariff terms and conditions. A small carrier could then indicate its rates for the services it offers in a separate rate schedule filing, referring to the terms and conditions applicable to those services.

8. The revised rules further reduce the burdens on small telephone companies by reducing the frequency of access tariff filings. Currently, each company filing an access tariff is required to file new rates annually based upon studies of costs and demands for the most recent year and for the future year. The Commission proposes that small company filings be required only every other year, coinciding with the beginning of the Docket 84-800 accounting period. Small companies would retain the option of filing revisions within the two-year period, but there would be no requirement that they do so.

9. Under these rules, the threshold for treatment as a small telephone company is 50,000 lines per study area. This threshold of 50,000 lines conforms the

definition in this area with the existing 50,000 line threshold used for determining eligibility for the small company contributions from the Universal Service Fund.

10. Also in this Order, the Commission had determined that small telephone companies should retain their dominant competitive classification because the companies continue to have the ability and incentive to file excessive access rates.

Ordering Clauses

11. Accordingly, *It Is Ordered* that Parts 1, 61, and 69 of the Commission's Rules, 47 CFR Parts 1, 61 and 69 are amended as set forth below.

12. *It Is Further Ordered* that the Secretary shall cause a summary of this Report and Order to be published in the **Federal Register.** In accord with the Paperwork Reduction Act of 1980, the Office of Management and Budget (OMB) has approved the collection of information requirement contained in these rules. The OMB control number for this information collection requirement is 3060–0298.

13. *It Is Further Ordered* that the motion to accept late-filed pleadings filed by Illinois Telephone Company *Is Granted.*

14. *It Is Further Ordered* that these amendments shall be effective on January 1, 1988 and that the first tariffs filed under these rules shall be scheduled to become effective in January, 1989.

List of Subjects

47 CFR Part 1

Communications common carrier, Practice and procedure, Petitions.

47 CFR Part 61

Communications common carrier, Tariffs.

47 CFR Part 69

Communications common carrier, Access charges, Reporting and recordkeeping requirements, Telephone.

Appendix A is a list of parties submitting comments and reply comments in this proceeding.

Parts 1, 61, and 69 of Title 47 of the Code of Federal Regulations are amended as follows:

PART 1—PRACTICE AND PROCEDURE

1. The authority citation for Part 1 would continue to read as follows:

Authority: Secs. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303; Implement 5 U.S.C. 552, unless otherwise noted.

2. Section 1.773 is amended by adding paragraph (a)(1)(iii) to read as follows:

§ 1.773 Petitions for suspension or rejection of new tariff filings.

(a) * * *

(1) * * *

(iii) For the purpose of this section, any tariff filing by a local exchange carrier filed pursuant to the requirements of § 61.39 will be considered prima facie lawful and will not be suspended by the Commission unless the petition requesting suspension shows that the cost and demand studies or average schedule information was not provided upon reasonable request. If such a showing is not made, then the filing will be considered prima facie lawful and will not be suspended by the Commission unless the petition requesting suspension shows each of the following:

(A) That there is a high probability the tariff would be found unlawful after investigation;

(B) That any unreasonable rate would not be corrected in a subsequent filing;

(C) That irreparable injury will result if the tariff filing is not suspended; and

(D) That the suspension would not otherwise be contrary to the public interest.

* * * * *

PART 61—TARIFFS

3. The authority citation for Part 61 would continue to read as follows:

Authority: Sec. 4, 48 Stat. 1066, as amended; 47 U.S.C. 154.

4. Section 61.12 is amended by redesignating existing paragraphs (e) and (f) as new paragraphs (f) and (g), and adding a new paragraph (e) to read as follows:

§ 61.12 Carriers.

* * * * *

(e) *Local Exchange Carrier.* A telephone company that provides telephone exchange service as defined in section 3(r) of the Communications Act of 1934.

* * * * *

5. Section 61.33 is amended by redesignating existing paragraphs (c) and (d) as new paragraphs (d) and (e), redesignating existing paragraph (b) as new paragraph (c), and revising its text, and adding new paragraph (b) to read as follows:

§ 61.33 Letters of transmittal.

* * * * *

(b) In addition to the requirements set forth in paragraph (a) of this section, any local exchange carrier choosing to file an Access Tariff under § 61.39 must include in the transmittal:

(1) A summary of the filing's basic rates, terms and conditions;

(2) A statement concerning whether any prior Commission facility authorization necessary to the implementation of the tariff has been obtained; and

(3) A statement that the filing is made pursuant to § 61.39.

(c) In addition to the requirements set forth in paragraph (a) and (b) of this section, the letter of transmittal must specifically reference by number any special permission necessary to implement the tariff publication. Special permission must be granted prior to the filing of the tariff publication, and may not be requested in the transmittal letter.

* * * * *

6. Section 61.38 is amended by revising paragraph (a) to read as follows:

§ 61.38 Supporting information to be submitted with letters of transmittal.

(a) *Scope.* This section applies to dominant carriers whose gross annual revenues exceed $500,000 for the most recent 12 month period of operations or are estimated to exceed $500,000 for a representative 12 month period. Local exchange carriers serving 50,000 or fewer access lines may submit Access Tariff filings pursuant to either this section or §61.39. However, the Commission may require any carrier to submit such information as may be necessary for review of a tariff filing.

* * * * *

7. Section 61.39 is added as follows:

§ 61.39 Optional supporting information to be submitted with letters of transmittal for Access Tariff filings by local exchange carriers serving 50,000 or fewer access lines.

(a) *Scope.* This section provides for an optional method of filing for any local exchange carrier who elects to issue its own Access Tariff and who serve 50,000 or fewer access lines in a study area as determined under § 67.611 of the Commission's Rules. However, the Commission may require any carrier to submit such information as may be necessary for review of a tariff filing.

(b) *Explanation and data supporting tariff changes.* The material to be submitted for either a tariff change or a new tariff which affects rates or charges must include an explanation of the filing in the transmittal as required by § 61.33. The basis for ratemaking must comply with the following requirements. It is not necessary to submit this supporting data at the time of the filing. However, the local exchange carrier should be prepared to submit the data promptly upon reasonable request by the Commission or interested parties.

(1) For a tariff change, the local exchange carrier which is a cost schedule carrier must propose rates based on the following:

(i) For the first year, a cost of service study for all elements for the most recent 12 month period with related demand for the same period.

(ii) For subsequent filings, a cost of service study for all elements for the total period since the local exchange carrier's last annual filing, with related demand for the same period.

(2) For a tariff change, the local exchange company which is an average schedule carrier must propose rates based on the following:

(i) For the first year, the local exchange carrier's most recent settlement from the National Exchange Carrier Association pool.

(ii) For subsequent filings, an amount calculated from the most recent average schedule formulas developed by the National Exchange Carrier Association.

(c) *Maximum allowable rate of return.* Local exchange carriers filing tariffs under this section are not required to comply with §§ 65.700 through 65.703, inclusive, of the Commission's Rules. However, costs must be calculated based on the local exchange carrier prescribed rate of return applicable to the period of the cost study required in paragraph (b) of this section.

PART 69—ACCESS CHARGES

8. The Authority citation for Part 69 would continue to read as follows:

Authority: Secs. 4, 201, 202, 203, 205, 218, 403, 48 Stat. 1066, 1070, 1072, 1077, 1094, as amended; 47 U.S.C. 154, 201, 202, 203, 205, 218, 403, unless otherwise noted.

9. Section 69.3 is amended by revising paragraph (a) and adding paragraph (f) to read as follows:

§ 69.3 Filing of access service tariffs.

(a) Except as provided in § 69.3(f) of this chapter, a tariff for access service shall be filed with this Commission for an annual period. Such tariffs shall be filed so as to provide a minimum of 90 days notice with a scheduled effective date of January 1.

* * * * *

(f) A tariff for access service shall be filed with this Commission for an annual period. Such tariffs shall be filed so as to provide a minimum of 90 days notice with a scheduled effective date of January 1. A tariff for access service provided by telephone companies with 50,000 lines or fewer in a study area, as determined under § 67.611 of this chapter, may be filed for a biennial period, with a minimum of 90 days notice, to begin on January 1 of any odd-numbered year. For purposes of computing end user charge access elements and carrier's carrier charges other than for the Carrier Common Line element to be effective on January 1 of any even-numbered year, the association may propose rate changes based upon statistical methods which represent a reasonable equivalent to the cost support information otherwise required under Part 61 of this chapter.

* * * * *

10. Section 69.603 is amended by adding new paragraph (g) to read as follows:

§ 69.603 Association functions.

* * * * *

(g) The association shall also prepare and file an access charge tariff containing terms and conditions for access service and a form for the filing of rate schedules by telephone companies that choose to reference these terms and conditions while filing their own access rates.

Federal Communications Commission.

William J. Tricarico,

Secretary.

[FR Doc. 87-16017 Filed 7-15-87; 8:45 am]

BILLING CODE 6712-01-M

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47 CFR Part 73

[MM Docket No. 85-350; FCC 87-136]

Television, AM Radio, FM Radio; Amendment to the Commission's Rules and Procedures Concerning Broadcast Equal Opportunity Practices and Reporting Requirements

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This action amends the Commission's rules and procedures regarding equal employment opportunities (EEO) in the broadcast industry. It incorporates into the Commission's rules the general EEO program requirements and suggested practices previously included only in the Model EEO Program Reports. It also establishes revised information collection systems for monitoring licensees' EEO activities, including a new Broadcast Station Annual Employment Report (FCC Form 395-B), a new Broadcast Equal Employment Opportunity Program Report (FCC Form 396), and a revised 5-point Model Program Report (FCC Form 396-A). Further, this action adopts procedures for evaluating broadcast stations' EEO performance based on the information to be provided by the revised reporting forms that will emphasize the Commission's concern with licensees' EEO efforts. The Commission stated that it has taken particular care to include in the new reporting requirements only those informational elements that are necessary for the evaluation of licensees' EEO efforts under the revised monitoring procedures.

EFFECTIVE DATE: August 17, 1987.

ADDRESS: Federal Communications Commission, Washington, DC. 20554.

FOR FURTHER INFORMATION CONTACT: Marcia Glauberman, Mass Media Bureau, (202) 632-6302.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order in MM Docket No. 85-350, adopted April 16, 1987, and released June 12, 1987.

The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street, Northwest, Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 2100 M Street, Northwest, Suite 140, Washington, DC 20037.

Summary of the Report and Order

1. On August 26, 1981, the Office of Management and Budget (OMB) disapproved the use of the Commission's EEO program reporting forms and their associated guidelines for program preparation. In view of OMB's action and the fact that new EEO requirements for the cable industry were established in 1985, the Commission adopted a *Notice of Proposed Rule Making (Notice)*, 50 FR 49566 (December 3, 1985), to consider revisions to its broadcast EEO procedures. In the *Notice*, the Commission proposed to replace its 5-point and 10-point Model EEO Program Reports with a new Broadcast EEO Program Report, to incorporate into the rules the general EEO guidelines concerning policies and practices, to revise the annual EEO reporting requirements for broadcasters, and to revise its procedures for evaluating broadcast licensee EEO performance. OMB filed comments regarding the proposed forms and suggested an alternative version of the Broadcast EEO Program Report. The Commission adopted a *Further Notice of Proposed Rule Making (Further Notice)*, 51 FR 43054 (November 28, 1986), to seek

comment on the alternative reporting requirement submitted by OMB.

2. In this Report and Order the Commission incorporates specific EEO program requirements and general guidelines for meeting those requirements into § 73.2080 of the rules, as proposed in the *Notice*. The Commission believes this will provide an appropriate and effective means of informing broadcasters, individuals employed or seeking employment by broadcast stations, and other interested parties of its EEO requirements. The Commission also retained the 5-point Model Program Report filing requirement as a means of informing applicants for new stations or assignments of licenses of existing stations of the EEO requirements, affirming their understanding of these obligations, and assisting them in the establishment of an EEO program.

3. The Commission adopts a new eight-part Broadcast Equal Employment Opportunity Program Report (Form 396), similar to the program report proposed by OMB, that would be submitted as part of each licensee's renewal application. This form will include instructions that are integrated into the form and will require licensees to indicate those practices that they use to implement various elements of their EEO programs. Licensees with fewer than five full-time employees will be required to complete only the identification and certification portions of this form. The principal differences between the new program report and the one proposed by OMB in this proceeding is that sections requesting information regarding hiring and promotions that are part of the existing form have been retained. In order to evaluate broadcast licensee's EEO efforts, the Commission adopts a two-step approach that will consider all available information about a licensee's EEO activities.

4. The Commission also adopts a new Annual Employment Report (Form 395–B) that maintains the existing reporting requirements for individual stations with only minor revisions to conform the statistical tables to the format of the EEO–1 form. Licensees with five or more full-time employees will identify the number of employees by race/national origin and sex in the same nine job categories as the existing Broadcast Annual Employment Report. Licensees with fewer than five full-time employees will be required to complete only the identification and certification portions of this form. The employment statistics for full-time and part-time employees will continue to be reported on separate tables. The Commission decides against changing the reporting threshold from five to six and combining data for full-time and part-time employees, as proposed in the *Notice*. Further, the Commission will no longer require the filings of Annual Employment Reports on a consolidated basis. However, the Commission will continue to require the filings of Annual Employment Reports for those headquarters employees whose primary duties lie in the operation and/or management of the individual broadcast stations.

5. Until the new FCC Form 395–B, new FCC Form 396, and revised FCC Form 396–A are available for distribution, licensees and applicants will continue to use the existing forms to satisfy the Commission's reporting requirements.

6. Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 604, a final regulatory flexibility analysis has been prepared. It is available for public viewing as part of the full text of this decision, which may be obtained from the Commission or its copy contractor.

7. The rules adopted herein have been analyzed with respect to the Paperwork Reduction Act of 1980 and found to impose new or modified requirements or burdens on the public. Implementation of these new/modified requirements and burdens will be subject to approval by the Office of Management and Budget as prescribed by the Act.

8. Accordingly, it is ordered that under the authority contained in sections 4(i) and 303 of the Communications Act of 1934, as amended, Part 73 of the Commission's Rules and Regulations is amended as set forth below, subject to approval by the Office of Management and Budget pursuant to the Paperwork Reduction Act of 1980. These rules and regulations are effective August 17, 1987.

9. It is further ordered that this proceeding is terminated.

List of Subjects in 47 CFR Part 73

Radio broadcasting, Television broadcasting.

Rule Changes

47 CFR Part 73 is amended to read as follows:

PART 73—[AMENDED]

1. The authority citation for Part 73 continues to read as follows:

Authority: 47 U.S.C. 154 and 303.

2. 47 CFR 73.2080 is revised to read as follows:

§ 73.2080 Equal employment opportunities.

(a) *General EEO policy.* Equal opportunity in employment shall be afforded by all licensees or permittees of commercially or noncommercially operated AM, FM, TV, or international broadcast stations (as defined in this part) to all qualified persons, and no person shall be discriminated against in employment by such stations because of race, color, religion, national origin, or sex.

(b) *EEO program.* Each broadcast station shall establish, maintain, and carry out a positive continuing program of specific practices designed to ensure equal opportunity in every aspect of station employment policy and practice. Under the terms of its program, a station shall:

(1) Define the responsibility of each level of management to ensure a positive application and vigorous enforcement of its policy of equal opportunity, and establish a procedure to review and control managerial and supervisory performance;

(2) Inform its employees and recognized employee organizations of the positive equal employment opportunity policy and program and enlist their cooperation;

(3) Communicate its equal employment opportunity policy and program and its employment needs to sources of qualified applicants without regard to race, color, religion, national origin, or sex, and solicit their recruitment assistance on a continuing basis;

(4) Conduct a continuing program to exclude all unlawful forms of prejudice or discrimination based upon race, color, religion, national origin, or sex from its personnel policies and practices and working conditions; and

(5) Conduct a continuing review of jo structure and employment practices an adopt positive recruitment, job design, and other measures needed to ensure genuine equality of opportunity to participate fully in all organizational units, occupations, and levels of responsibility.

(c) *EEO program requirements.* A broadcast station's equal employment opportunity program should reasonably address itself to the specific areas set forth below, to the extent possible, and to the extent that they are appropriate i terms of the station's size, location, etc

(1) Disseminate its equal opportunity program to job applicants and employees. For example, this requirement may be met by:

(i) Posting notices in the station's office and other places of employment, informing employees, and applicants for employment, of their equal employment opportunity rights. Where it is appropriate, such equal employment opportunity notices should be posted in languages other than English;

(ii) Placing a notice in bold type on the employment application informing prospective employees that discrimination because of race, color, religion, national origin, or sex is prohibited;

(iii) Seeking the cooperation of labor unions, if represented at the station, in the implementation of its EEO program and the inclusion of non-discrimination provisions in union contracts;

(iv) Utilizing media for recruitment purposes in a manner that will contain no indication, either explicit or implicit, of a preference for one sex over another and that can be reasonably expected to reach minorities and women.

(2) Use minority organizations, organizations for women, media, educational institutions, and other potential sources of minority and female applicants, to supply referrals whenever job vacancies are available in its operation. For example, this requirement may be met by:

(i) Placing employment advertisements in media that have significant circulation among minorities residing and/or working in the recruiting area;

(ii) Recruiting through schools and colleges, including those located in the station's local area, with significant minority-group enrollments;

(iii) Contacting, both orally and in writing, minority and human relations organizations, leaders, and spokesmen and spokeswomen to encourage referral of qualified minority or female applicants;

(iv) Encouraging current employees to refer minority or female applicants;

(v) Making known to recruitment sources in the employer's immediate area that qualified minority members and females are being sought for consideration whenever you hire and that all candidates will be considered on a nondiscriminatory basis.

(3) Evaluate its employment profile and job turnover against the availability of minorities and women in its recruitment area. For example, this requirement may be met by:

(i) Comparing the composition of the relevant labor area with composition of the station's workforce;

(ii) Where there is underrepresentation of either minorities and/or women, examining the company's personnel policies and practices to assure that they do not inadvertently screen out any group and take appropriate action where necessary. Data on representation of minorities and women in the available labor force are generally available on a metropolitan statistical area (MSA) or county basis.

(4) Undertake to offer promotions of qualified minorities and women in a nondiscriminatory fashion to positions of greater responsibility. For example, this requirement may be met by:

(i) Instructing those who make decisions on placement and promotion that qualified minority employees and females are to be considered without discrimination, and that job areas in which there is little or no minority or female representation should be reviewed;

(ii) Giving qualified minority and female employees equal opportunity for positions which lead to higher positions. Inquiring as to the interest and skills of all lower paid employees with respect to any of the higher paid positions.

(5) Analyze its efforts to recruit, hire, and promote minorities and women and address any difficulties encountered in implementing its equal employment opportunity program. For example, this requirement may be met by:

(i) Avoiding use of selection techniques or tests that have the effect of discriminating against qualified minority groups or females;

(ii) Reviewing seniority practices to ensure that such practices are nondiscriminatory;

(iii) Examining rates of pay and fringe benefits for employees having the same duties, and eliminating any inequities based upon race or sex discrimination.

3. The table in 47 CFR 73.3500 is amended by redesignating Form 395 as Form 395–B and revising the entries for newly redesignated Form 395–B and Forms 396 and 396–A to read as follows:

§ 73.3500 Application and report forms.

Form No.	Title
395–B	Annual Employment Report and instructions.
396–A	Broadcast Equal Employment Opportunity Model Program Report.
396	Broadcast Equal Employment Opportunity Program Report.

William J. Tricarico,
Secretary.

[FR Doc. 87–15915 Filed 7–15–87; 8:45 am]

BILLING CODE 6712–01–M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 603 and 605

[Docket No. 70351–7051]

Confidentiality of Statistics

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Interim final rule.

SUMMARY: The Magnuson Fishery Conservation and Management Act (Magnuson Act) protects the identity of any person who submits statistics to the Secretary of Commerce (Secretary) in compliance with requirements of a preliminary fishery management plan (PMP), or a fishery management plan (FMP). NOAA reissues these regulations which specify (1) persons having access to confidential statistics, (2) systems required to protect the indentity of persons submitting such data, and (3) circumstances under which such data may or may not be released. Comments are invited. The intended effect is to prevent misuse of confidential statistics by promulgating regulations which govern the collection, handling and use of statistics collected under authority of the Magnuson Act.

DATES: The Part 603 is suspended and a new Part 605 is effective from July 16, 1987, until December 31, 1987. Written comments must be received on or before August 31, 1987.

ADDRESSES: Comments should be sent to B.G. Thompson, National Fishery Statistics Program, National Marine Fisheries Service, 1825 Connecticut Avenue, NW., Washington, DC 20235.

FOR FURTHER INFORMATION CONTACT: B.G. Thompson (Chief, National Fishery Statistics Program), (202) 673–5335.

SUPPLEMENTARY INFORMATION: On January 9, 1978, NMFS published proposed regulations on the confidentiality of statistics under the Magnuson Act (43 FR 1480) and requested public comment. As a result of public comments received, and a Magnuson Act amendment requiring collection of data on the capacity of U.S. fish processors to process domestic catch, the proposed regulations were revised and published as an interim rule on December 7, 1979, (44 FR 70480). Public comments were invited on the interim final regulations until January 23, 1980.

This action suspends the present Part 603, revises those regulations and reissues them under a new Part 605 as an interim final rule with request for comment for the following reasons. Several years of experience have been gained by NMFS in administering the Magnuson Act since the last publication of these regulations. In addition, section 303(d) of the Magnuson Act, which governs confidentiality, was amended in November 1986 by Pub. L. 99–659. This rule implements that amendment and clarifies certain sections of the existing rule. A final rule will be issued by the end of 1987.

This rule differs from the 1979 interim final rule in the following ways:

(1) Several definitions have been added or revised for clarity.

(2) As required by Pub. L. 99–659, the regulations have been revised at §603.5(a)(3) and reissued at §605.5(a)(3) to clarify language on Federal employee access to, and use of, data required to be submitted to the Secretary under an FMP or PMP. Access to confidential statistics is granted to Federal employees who are responsible for FMP or PMP development and monitoring. The regulations have never restricted NMFS enforcement agents from inspecting data maintained by fishermen in compliance with a PMP or FMP reporting or recordkeeping requirement. The NMFS agents have also had authorized access to similar data maintained by dealers and processors. Clarifying language is taken directly from the amended statute.

(3) Regional Fishery Management Council members and employees, Plan Development Teams, and Scientific and Statistical Committees have historically been denied access to confidential federal fishery statistics as a matter of NMFS policy. Denial of access precluded individual competitive advantage of Council members who are involved in the fishing industry. This was important since even the appearance of a conflict of interest compromises the ability of NMFS to collect accurate confidential data. Routine denial of access also prevented Council employees from the awkward position of having access to information that their employers were denied.

This policy changed in 1984 with implementation of Pub. L. 97–453 which amended Council procedural matters. This amendment required Councils to establish policies and procedures governing access and use of confidential statistics that they may receive. Working closely with NMFS, all Councils adopted procedures governing confidentiality of statistics and conflicts of interest, completing the process in 1984. Based on these procedures, NMFS has granted Council employees limited access to confidential data on a need-to-know basis. Experience has shown that Council employee access has assisted in the preparation and amendment of FMP's and associated documents.

Section 303(d)(1) of the Magnuson Act as amended by Pub. L. 99–659 authorizes access to confidential statistics by Council employees who are responsible for management plan development and monitoring. The statute reinforces what the NMFS policy has been since 1984. Language authorizing Council staff employee access to confidential fishery data has been added to regulations at §603.5(c) and reissued as §605.5(c).

Access to confidential data is not granted to Council members, Plan Development Teams, or Scientific and Statistical Committees. Non-confidential data can satisfy the needs of these groups. Members of Council committees and advisory panels are often employed by State or federal agencies, and when necessary may be authorized access to confidential federal statistics through their employing agencies under § 603.5 (a) or (b).

(4) The standard for collection agreements with states was changed from the requirement that the state protection be "similar to" to "at least as protective," to eliminate the requirement of states to conform their statutory language to that of NMFS.

Classification

This action is categorically excluded from the requirement to prepare an environmental assessment by NOAA Directive 02–10.

The NOAA Administrator determined that this interim final rule is not a "major" rule requiring a regulatory impact analysis because it prescribes agency procedures and will have no economic impact.

For the same reasons, the General Counsel of the Department of Commerce certified to the Small Business Administration that this interim final rule, if adopted, will not have a significant economic impact on a substantial number of small entities since it prescribes internal procedures within NOAA. As a result, a regulatory flexibility analysis was not prepared.

This rule does not contain a collection-of-information requirement subject to the Paperwork Reduction Act.

The Assistant administrator finds that delay in implementation of the rule would adversely effect fishery management actions under the Magnuson Act, and therefore it is contrary to the public interest to delay for 30 days its effective date under the provision of section 553(b) of the Administrative Procedures Act.

Dated: July 10, 1987.

Bill Powell,

Executive Director, National Marine Fisheries Service.

For the reasons set out in the preamble, Part 603 of Title 50 of the Code of Federal Regulations is suspended from July 16, 1987, until December 31, 1987, and a new Part 605 is added to read as follows:

PART 605—CONFIDENTIALITY OF STATISTICS

Sec.

605.1 Purpose.
605.2 Definitions.
605.3 Types of statistics covered.
605.4 Collection and maintenance of statistics.
605.5 Access to statistics.
605.6 Control system.
605.7 Release of statistics.

Authority: 5 U.S.C. 301; 16 U.S.C. 1853(d).

§ 605.1 Purpose.

The purpose of this part is to prescrib procedures to protect the identity of an submitter of statistics required by the Secretary under a Preliminary Management Plan or a Fishery Management Plan.

§ 605.2 Definitions.

The terms used in this part have the same meaning as ascribed to them in section 3 of the Magnuson Act and Part 601 of this chapter.

"Aggregate or summary form" means confidential data structured in such a way that the identity of the submitter cannot be determined either from the present release of the data or in combination with other releases.

"Assistant Administrator" means the Assistant Administrator for Fisheries, NOAA, or a designee authorized to hav access to confidential data under § 605.5(a).

"Confidential statistics" are those submitted as a requirement of a PMP or FMP and which will reveal the business or identity of the submitter.

"Data", "statistics" and "information" are used interchangeably.

"FMP" means fishery management plan developed under the Magnuson Act.

"Magnuson Act" means the Magnuso Fishery Conservation and Management Act, 16 U.S.C. 1801 *et seq.*

"NMFS" means the National Marine Fisheries Service.

"NOAA" means the National Oceani and Atmospheric Administration.

"PMP" means preliminary management plan developed under the Magnuson Act.

§ 605.3 Types of statistics covered.

This part applies to all information required to be submitted under any PMP or FMP including but not limited to the following: Information regarding the type and quantity of fishing gear used; catch by species in numbers of fish or weight thereof; areas in which fishing was engaged; time of fishing, number of hauls, and the estimated processing capacity of, and the actual processing capacity utilized by, U.S. fish processors.

§ 605.4 Collection and maintenance of statistics.

(a) *General.* (1) All statistics required to be submitted to the Secretary are provided to the Assistant Administrator.

(2) After receipt, the Assistant Administrator will delete all identifying particulars from the statistics at the first practicable opportunity consistent with the needs of NMFS and good scientific practice.

(3) Appropriate safeguards as specified by NOAA Directives, or other NOAA or NMFS internal procedures, apply to the collection and maintenance of all statistics, whether separated from identifying particulars or not, so as to ensure their confidentiality;

(b) *Collection agreements with States.* (1) The Assistant Administrator may enter into an agreement with a State authorizing the State to collect statistics on behalf of the Secretary.

(2) NMFS will not enter into a cooperative collection agreement with a State unless the State has authority to protect the statistics from disclosure in a manner at least as protective as these regulations.

§ 605.5 Access to statistics.

(a) *Federal employees.* Statistics submitted as a requirement of a PMP or FMP and which will reveal the identity of the submitter will only be accessible to the following:

(1) Personnel within NMFS responsible for the collection, processing, and storage of the statistics;

(2) Federal employees who are responsible for FMP or PMP development and monitoring;

(3) Personnel within MNFS performing research that requires confidential statistics.

(4) Other NOAA personnel on a demonstrable need-to-know basis; and

(5) NOAA/NMFS contractors or grantees that require access to confidential statistics to perform functions authorized by a Federal contract or grant.

(b) *State personnel.* Confidential statistics will only be accessible if

(1) The State has independent legal authority to collect the same statistics on its own behalf, and;

(2) The State has entered into a cooperative data collection agreement with the Assistant Administrator.

(c) *Regional Fishery Management Council employees.* Access to confidential data may be granted to Council employees who are responsible for FMP or PMP development and monitoring.

(d) *Prohibitions.* Persons having access to these data are prohibited from unauthorized use or disclosure, and are subject to the provisions of 18 U.S.C. 1905, 16 U.S.C. 1857, and NOAA/NMFS internal procedures, including NOAA Directive 88–30.

§ 605.6 Control system.

(a) The Assistant Administrator maintains a control system to protect the identity of submitters of statistics required by a PMP or FMP. The control system

(1) Identifies those persons who have access to the statistics;

(2) Contains procedures to limit access to confidential data to authorized users; and

(3) Provides for safeguarding the data.

(b) This system requires that all persons who have authorized access to the data be informed of the confidentiality of the data. These persons are required to sign a statement that they

(1) Have been informed that the data are confidential, and

(2) Have reviewed and are familiar with the procedures to protect confidential statistics.

§ 605.7 Release of statistics.

(a) The Assistant Administrator will not release to the public any statistics required to be submitted under a PMP or FMP in a form which would identify the submitter except as required by court order. Release as required by court order will be made only after approval of the NOAA Office of General Counsel.

(b) All requests from the public for statistics submitted in response to a requirement of a PMP or FMP will be processed consistent with the NOAA Freedom of Information Act (FOIA) regulations (15 CFR Part 903), NOAA Directives Manual 21–25, Department of Commerce Administrative Orders 205–12 and 205–14 and 15 CFR Part 4.

(1) The Assistant Administrator has the authority to issue initial denials of requests subject to the Freedom of Information Act (FOIA) for statistics submitted in response to a PMP or FMP. Initial denials will indicate that exemption 3 of FOIA (5 U.S.C. 552(b)(3)) is the basis for denial, making specific reference to section 303(d) of the Magnuson Act and reciting in its entirety the first sentence of that section. Furthermore, citing this regulation, the denial also will indicate that the application of section 303(d) is nondiscretionary and refer specifically to the appropriate portion of the applicable regulation that required the submission of the requested statistics. In addition, exemption (b)(4) (5 U.S.C. 552(b)(4)), as well as other applicable FOIA exemptions, may be cited, where appropriate.

(2) Appeals from initial denials of FOIA requests should be addressed to the General Counsel, U.S. Department of Commerce, Washington, DC 20230. If a decision on appeal is to make the statistics available in whole or in part, such statistics will be promptly made available for inspection and copying.

[FR Doc. 87–16177 Filed 7–15–87; 8:45 am]

BILLING CODE 3510-22-M

Proposed Rules

Federal Register
Vol. 52, No. 136
Thursday, July 16, 1987

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

7 CFR Part 987

Domestic Dates Produced or Packed in Riverside County, CA; Proposed Change of Container Requirements

AGENCY: Agricultrual Marketing Service, USDA.

ACTION: Proposed rule.

SUMMARY: This proposal invites written comments on adding a two-pound plastic container to the container regulations prescribed for whole and pitted DAC dates of any variety handled in the United States under the Federal marketing order for California dates. Date container sizes are limited under the marketing order to prevent pricing confusion in the marketplace. The proposed change would give handlers additional marketing flexibility. DAC dates are the highest quality of dates shipped under the marketing order. The proposal was recommended unanimously by the California Date Administrative Committee. The committee works with the USDA in administering the date marketing order program.

DATE: Comments must be recived by August 17, 1987.

ADDRESSES: Send three copies of comments to the Docket Clerk, F&V, AMS, Room 2085-2, U.S. Department of Agriculture, Washington, DC 20250-1400, where they will be available for public inspection during regular business hours. The comments should reference the date and page numbers of this issue of the Federal Register.

FOR FURTHER INFORMATION CONTACT: James M. Scanlon, Acting Chief, Marketing Order Administration Branch, F&V, AMS, USDA, Washington, DC 20250-1400, telephone: (202) 447-5697.

SUPPLEMENTARY INFORMATION: This proposal has been reviewed under Executive Order 12291 and Departmental Regulation 1512-1 and has been determined to be a "non-major" rule under criteria contained therein.

Pursuant to requirements set forth in the Regulatory Flexibility Act (RFA), the Administrator of the Agricultural Marketing Service has determined that this action would not have a significant economic impact on a substantial number of small entities.

The purpose of the RFA is to fit regulatory actions to the scale of business subject to such actions in order that small businesses will not be unduly or disproportionately burdened. Marketing orders issued pursuant to the Agricultural Marketing Agreement Act of 1937 ("the Act"; 7 U.S.C. 601 through 674), and rules issued thereunder, are unique in that they are brought about through group actions of essentially small entities acting on their own behalf. Thus, both statutes have small entity orientation and compatibility.

Date production in the United States is in the Coachella Valley of California. Nearly all of the dates are grown and packed within 20 miles of Indio, California. In 1986, 17,600 tons of California dates were produced. This is about 39 percent smaller than the record large 1985 crop of 29,000 tons. Shipments of California whole and pitted dates in the United States totaled 4,937 tons in the 1985-86 marketing year, and 4,425 tons in 1984-85. The farm value of the 1985 crop was $25.1 million. For 1985, bearing acreage was 4,373 acres and nonbearing acreage was 1,297 acres. Since 1980, more date palms have been planted than have been removed.

There are approximately 26 handlers of California dates subject to regulation under the marketing order. There are approximately 150 growers of dates in California. Small agricultural producers have been defined by the Small Business Administration (13 CFR 121.2) as those having annual gross revenues for the last three years of less than $100,000, and agricultural service firms, which includes handlers, are defined as those whose gross annual receipts are less than $3,500,000. The majority of handlers and producers of dates may be classified as small entities.

It is the Department's view that permitting use of an additional container would provide handlers additional marketing flexibility and benefit both growers and handlers.

This proposal would amend § 987.112a(b)(3)(i) and (ii) of Subpart—Administrative Rules (7 CFR 987.101 through 987.172) to authorize the marketing of whole and pitted DAC dates in the domestic market in two-pound plastic containers. This section is issued under § 987.48 of the marketing agreement and Marketing Order 987 (7 CFR Part 987), as amended, regulating the handling of domestic dates produced or packed in Riverside County, California.

Section 987.112a(b)(3) prescribes consumer sizes of plastic containers, in terms of net weight content, that handlers must use when they package DAC dates is such containers for handling in domestic markets. The largest plastic containers currently authorized for whole and pitted date shipments are 1 pound 8 ounces, and more than two pounds. The committee believes that a two-pound container would fit advantageously into the array of sizes currently authorized. The committee also believes that the use of two-pound plastic containers would foster increased whole and pitted date sales.

List of Subjects in 7 CFR Part 987

Agricultural Marketing Service, Marketing agreements and orders, Dates, California.

For the reasons set forth in the preamble, Part 987 is proposed to be amended as follows:

PART 987—DATES PRODUCED OR PACKED IN RIVERSIDE COUNTY, CA

1. The authority citation for 7 CFR Part 987 continues to read as follows:

Authority: Secs. 1-19, 48 Stat. 31, as amended; 7 U.S.C. 601-674.

§ 987.112a [Amended]

2. Section 987.112a(b)(3)(i) and (ii) of Subpart—Administrative Rules (7 CFR 987.101 through 987.172), are amended by inserting the words "two pounds or more" in place of the words "more than two pounds".

Dated: July 9, 1987.

William J. Doyle,

Acting Deputy Director, Fruit and Vegetable Division, Agricultural Marketing Service.

[FR Doc. 87-16110 Filed 7-15-87; 8:45 am]

BILLING CODE 3410-02-M

7 CFR Part 989

Raisins Produced From Grapes Grown in California; Amendment to the Maturity Dockage System for Certain Seedless Raisins

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Proposed rule.

SUMMARY: This proposed rule invites comments on amendments to the maturity dockage system for Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins. Currently, handlers may acquire as standard raisins any lot of these raisins containing 40.0 percent to 49.9 percent Grade B or better raisins, by weight, under a maturity dockage system. This proposal would lower the minimum allowable percentage of Grade B or better raisins that handlers may acquire under a maturity dockage system, and would change the dockage factor applicable to raisin lots containing certain maturity levels. The industry feels the current dockage system is too restrictive on producers.

DATE: Comments must be received by July 27, 1987.

FOR FURTHER INFORMATION CONTACT: James M. Scanlon, Acting Chief, Marketing Order Administration Branch, Fruit and Vegetable Division, AMS, USDA, Washington, DC 20250–1400 (202) 447–5697.

ADDRESS: Interested persons are invited to submit written comments concerning this proposal. Comments must be sent in triplicate to the Docket Clerk, Fruit and Vegetable Division, AMS, USDA, Room 2085, South Building, Washington, DC 20250–1400. Comments should reference the date and page number of this issue of the **Federal Register** and will be available for public inspection in the Office of the Docket Clerk during regular business hours.

SUPPLEMENTARY INFORMATION: This proposed rule has been reviewed under Executive Order 12291 and Departmental Regulation No. 1512–1 and has been determined to be a "non-major" rule under criteria contained therein.

Pursuant to requirements set forth in the Regulatory Flexibility Act (RFA), the Administrator of the Agricultural Marketing Service has considered the economic impact of this proposed action on small entities.

The purpose of the RFA is to fit regulatory actions to the scale of business subject to such actions in order that small businesses will not be unduly or disproportionately burdened. Marketing orders issued pursuant to the Agricultural Marketing Agreement Act (the "Act", 7 U.S.C. 601 through 674), as amended, and rules issued thereunder, are unique in that they are brought about through group action of essentially small entities acting on their own behalf. Thus, both statutes have small entity orientation and compatibility.

The Raisin Administrative Committee reports that there were approximately 21 handlers and 5,000 producers of Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins during the 1986–87 crop year. Small agricultural producers have been defined by the Small Business Administration (13 CFR 121.2 (1985)) as those having average annual gross revenues for the last three years of less than $100,000 and agricultural service firms, which would include handlers, are defined as those whose gross annual receipts are less than $3,500,000. The majority of California raisin producers and handlers may be characterized as small producers and handlers. The estimated average crop value of production for the past three years for the five varietal types was $201,583,000. The regulation would apply to all handlers of Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins. The amount of tonnage estimated to be affected during the upcoming season by this regulation is 375,495 tons.

Producers are paid according to the creditable fruit weight of raisins delivered. Lots of raisins containing 50.0 percent or more Grade B or better raisins are the most desirable. This amendment would lower the minimum allowable percentage of Grade B or better raisins that producers may deliver to handlers from 40.0 percent to 35.0 percent and change the weight dockage factor for lots below the 50.0 percent Grade B or better maturity level. If producers deliver lots of raisins which contain amounts of Grade B or better raisins, less than 50.0 percent, by weight, the delivery weight of such lots will be docked, thereby decreasing their payment for that lot. Raisin lots delivered below the 35.0 percent Grade B or better level would be off-grade and require reconditioning. Producers would incur the reconditioning costs necessary to bring such lots within acceptable requirements. Currently, raisin lots delivered below the 40.0 percent Grade B or better require such reconditioning.

The regulation would affect all producers of Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins; therefore, all small producers that produce these types are affected.

The reporting and recordkeeping requirements under the raisin marketing order are incurred by handlers. However, handlers in turn may require individual producers to utilize certain reporting and recordkeeping practices to enable handlers to carry out their functions. Costs incurred by handlers in connection with recordkeeping and reporting requirements are likely passed on to producers. Since reporting and recordkeeping functions are already used in connection with this quality requirement, there will not likely be an increase in these burdens. USDA inspectors currently determine the percent of Grade B or better raisins in a lot. Thus, no additional costs of this type would be expected.

Based on available information, the Administrator of the Agricultural Marketing Service has determined that the issuance of this proposed rule would not have a significant economic impact on a substantial number of small entities.

Raisin lots containing 50.0 percent or higher Grade B or better raisins are accepted by handlers as standard raisins. The maturity dockage system currently permits handlers to acquire as standard raisins any lot of Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins even though the lot has been determined to be off-grade because it contains fewer than 50.0 percent, by weight, of well-matured or reasonably well-matured raisins. Raisin lots containing less than 49.9 percent, by weight, of Grade B or better raisins are subject to a dockage factor. This factor reduces the weight of the lot by an amount approximating the weight of raisins needed to be removed in order for the balance of the lot to meet grade standards. Raisin lots containing 40.0 percent to 49.9 percent Grade B or better raisins are docked a 0.2 percent weight reduction for each 0.1 percent below 50.0 percent of Grade B or better raisins down to 40.0 percent.

The industry feels that the current maturity dockage system is too restrictive on producers. Handlers can easily process raisin lots that have fewer Grade B or better raisins by blending them with a better quality lot to bring the lot up to acceptable quality standards. Also, the industry feels that the air stream sorter used for determining Grade B or better maturity is not an extremely accurate tool of measurement. The industry feels that the air stream sorter does not give a consistently accurate reading of the amount of Grade B or better raisins in a lot, especially when raisins are exposed to moisture. The Committee is currently conducting research to find a more accurate device for Grade B or better determination. The Committee has recommended these revisions in the maturity dockage system until another method of determination is developed.

The Committee has recommended that the minimum allowable percentage of Grade B or better raisins be lowered and three maturity levels be established for the purpose of applying an increasing dockage factor for lots containing fewer amounts of Grade B or better raisins. Producers delivering these varietal types of raisins containing between 49.9 percent to 45.0 percent Grade B or better would be docked a 0.1 percent weight reduction for each 0.1 percent of Grade B or better raisins below 49.9 percent down to 45.0 percent. Producers delivering raisins between 44.9 percent to 40.0 percent Grade B or better would be docked an additional 0.2 percent weight reduction for each 0.1 percent of Grade B or better raisins below 44.9 percent down to 40.0 percent. Producers delivering raisins between 39.9 percent to 35.0 percent Grade B or better would be docked an additional 0.3 percent weight reduction for each 0.1 percent of Grade B or better raisins below 39.9 percent down to 35.0 percent. Lots containing less than 34.9 percent Grade B or better raisins would be off-grade and require reconditioning before they could be acquired as standard raisins by handlers.

Interested persons are invited to submit their views and comments on this proposal. A 10-day comment period is considered adequate because a final rule, if issued, should be issued prior to deliveries of the 1987–88 crop in order to allow producers to plan accordingly. Deliveries of raisins usually begin in mid-September.

This proposed rule is issued under Marketing Order No. 989, as amended (7 CFR Part 989), regulating the handling of raisins produced from grapes grown in California. The order is effective under the Act.

List of Subjects in 7 CFR Part 989

Marketing agreements and orders, Grapes, Raisins, and California.

For the reasons set forth in the preamble, 7 CFR Part 989 is proposed to be amended as follows:

PART 989—RAISINS PRODUCED FROM GRAPES GROWN IN CALIFORNIA

1. The authority citation for 7 CFR Part 989 continues to read as follows:

Authority: Secs. 1–19, 48 Stat. 31, as amended; 7 U.S.C. 601–674.

2. Section 989.213 is revised to read as follows:

Subpart—Supplementary Regulations

* * * * *

§ 989.213 Maturity dockage.

(a) Subject to prior agreement between handler and tenderer, Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins containing from 35.0 percent through 49.9 percent, by weight, of well-matured or reasonably well-matured raisins may be acquired by a handler under a weight dockage system. The creditable weight of each lot of raisins acquired under the maturity dockage system shall be obtained by multiplying the applicable net weight or creditable weight (weight determined by applying the applicable weight adjustment factor for moisture) of the lot of raisins by the applicable dockage factor from the dockage table prescribed in paragraphs (b), (c), and (d) of this section.

(b) *Maturity dockage table applicable to Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins with 45.0 percent through 49.9 percent Grade B or better:*

Percent well-matured or reasonably well-matured	Dockage factor
50.0 or more	(1)
49.9	.999
49.8	.998
49.7	.997
49.6	996
49.5	.995

[1] No dockage.

Note: Percentages less than the last percentage shown in the table, down to 45.0 percent, shall be expressed in the same increments as the foregoing, and the dockage factor for each such increment shall be .001 less than the dockage factor for the preceding increment.

(c) *Maturity dockage table applicable to Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins with 40.0 percent 44.9 Grade B or better:*

Percent well-matured or reasonably well-matured	Docket factor
44.9	.948
44.8	.946
44.7	.944
44.6	.942
44.5	.940
44.4	.938

Note: Percentages less than the last percentage shown in the table, down to 40.0 percent, shall be expressed in the same increments as the foregoing, and the dockage factor for each such increment shall be .002 less than the dockage factor for the preceding increment.

(d) *Maturity dockage table applicable to Natural (sun-dried) Seedless, Golden Seedless, Dipped Seedless, Oleate and Related Seedless, and Monukka raisins with 35.0 percent through 39.9 percent Grade B or Better:*

Percent well-matured or reasonably well-matured	Dockage factor
39.9	.847
39.8	.844
39.7	841
39.6	.838
39.5	835
39.4	.832

Note: Percentages less than the last percentage shown in the table shall be expressed in the same increments as the foregoing, and the dockage factor for each such increment shall be .003 less than the dockage factor for the preceding increment. No dockage shall apply to lots of raisins containing 34.9 percent or less of well-matured or reasonably well-matured raisins.

Dated: July 9, 1987.

Ronald L. Cioffi,

Acting, Deputy Director, Fruit and Vegetable Division.

[FR Doc. 87–16109 Filed 7–15–87; 8:45 am]

BILLING CODE 3410-12-M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 102

[Docket No. 80N–0140]

Diluted Fruit or Vegetable Juice Beverages Other Than Diluted Orange Juice Beverages

AGENCY: Food and Drug Administration.

ACTION: Proposed rule.

SUMMARY: The Food and Drug Administration (FDA) is proposing to revoke the common or usual name regulation for diluted fruit or vegetable juice beverages other than diluted orange juice beverages. This regulation

was published in the **Federal Register** of June 10, 1980 (45 FR 39247), but has never become effective. The revocation of this regulation will allow voluntary percentage labeling of these diluted juice beverages at the discretion of the manufacturer and according to the demands of the marketplace. Diluted orange juice beverages would continue to be subject to the percentage labeling requirement that has been in effect for diluted orange juice beverages since 1973. This proposed action also withdraws the proposed rule published in the **Federal Register** of June 1, 1984 (49 FR 22831), which, among other things, exempted cranberry juice products from percentage ingredient labeling requirements.

DATE: Comments by September 14, 1987.

ADDRESS: Written comments are to be submitted to the Dockets Management Branch (HFA-305), Food and Drug Administration, Rm. 4-62, 5600 Fishers Lane, Rockville, MD 20857.

FOR FURTHER INFORMATION CONTACT: Elizabeth J. Campbell, Center for Food Safety and Applied Nutrition (HFF-312), Food and Drug Administration, 200 C Street SW., Washington, DC 20204, 202-485-0175.

SUPPLEMENTARY INFORMATION: FDA published a final rule establishing a common or usual name for diluted fruit or vegetable juice beverages other than diluted orange juice beverages (21 CFR 102.33) in the **Federal Register** of June 10, 1980 (45 FR 39247). The regulation would have required all diluted juice beverages, other than diluted orange juice, to be labeled with a descriptive name identifying the beverage and a percentage declaration of the amount of juice contained in the beverage. The effective date of the regulation was extended indefinitely in the **Federal Register** on June 27, 1984 (49 FR 26541).

In the **Federal Register** of June 1, 1984 (49 FR 22831), FDA proposed to amend 21 CFR 102.33, among other things, to exempt cranberry juice products from percentage ingredient labeling requirements. This proposed action to revoke the 1980 common or usual name regulation for diluted fruit or vegetable juice beverages other than diluted orange juice beverages withdraws the proposal published in the **Federal Register** of June 1, 1984 (49 FR 22831).

The percentage declaration labeling requirement in the 1980 rule was similar in concept to a percentage declaration labeling requirement for diluted orange juice beverages (21 CFR 102.32) that was published in the **Federal Register** of March 14, 1973 (38 FR 6969), and became effective on March 14, 1973. However, in the case of diluted organge juice beverages, there were data to support an average soluble solids content for single strength orange juice. In the case of diluted juice beverages other than orange juice, the agency did not have such data and recognized the need to establish average soluble solids values for individual juices. These values would provide an industry-wide basis for the juice content in individual diluted juice beverages. Because data to establish such values were not available to the agency, in the preamble to the final rule FDA stated that, as an interim measure, the actual amount of juice used to prepare an individual diluted juice beverage product, rather than average soluble solids values, would be the basis for the percentage declaration (45 FR 39247; June 10, 1980). To date, no information or data have been developed to establish average soluble solids content values for individual, single strength juices other than orange juice.

The agency's 1980 decision to require percentage declaration has proven to be controversial. For example, the cranberry juice industry has contended that there are significant differences between high acid and non-high acid juices and that these differences support separate consideration of the labeling requirements for each type of diluted juice beverage. Other diluted juice manufacturers have argued that there is no basis for a distinction between high acid and non-high acid juices. Because of this controversy among various manufacturers of diluted juice beverages and the agency's inability to satisfactorily resolve the issue with an appropriate regulation, the regulation has never gone into effect.

The agency is unaware of any significant consumer awareness problems concerning the value of diluted juice beverages during the past 6 years since the regulation was stayed. Since 1930, manufacturers have been permitted to voluntarily place accurate, truthful information—including the percentage of juice content—on food labels. In the view of several producers who have opted to include percentage juice information on product labeling, the information has been useful to consumers. However, manufacturers who have opted not to use the declaration report no consumer complaints, and the agency has received no such complaints directly.

Under these circumstances, and in light of the lack of data concerning average soluble solids content values for individual, single strength juices, the agency believes that the all inclusive labeling requirement called for in the 1980 regulation is neither necessary nor practicable at this time. Therefore, the agency is proposing to revoke the 1980 final rule and to terminate the rulemaking proceedings to establish a common or usual name for diluted fruit or vegetable juice beverages other than orange juice beverages. This action in no way precludes manufacturers from continuing to voluntarily place on product labeling information, such as percentage juice content information, that may be useful to the consumer.

Because the regulation is not in effect, the revocation of the regulation will have little or no economic impact. Therefore, FDA has determined that this proposal to revoke the regulation, if promulgated, has no economic effects, and, therefore, is not a major rule under Executive Order 12291. For the same reason, FDA certifies, in accordance with section 605(b) of the Regulatory Flexibility Act of 1980, that this proposed rule, if promulgated, would not have a significant economic impact on a substantial number of small entities.

Interested persons may, on or before September 14, 1987, submit to the Dockets Management Branch (address above) written comments regarding this proposal. Two copies of any comments are to be submitted, except that individuals may submit one copy. Comments are to be identified with the docket number found in brackets in the heading of this document. Received comments may be seen in the office above between 9 a.m. and 4 p.m., Monday through Friday.

List of Subjects in 21 CFR Part 102

Beverages, Food standards, Food labeling, Frozen foods, Fruit juices, Oils and facts, Onions, Potatoes, Seafood.

Therefore, under the Federal Food, Drug, and Cosmetic Act, it is proposed that Part 102 be amended as follows:

PART 102—COMMON OR USUAL NAME FOR NONSTANDARDIZED FOODS

1. The authority citation for 21 CFR Part 102 is revised to read as follows:

Authority: Secs. 201(n), 403, 701(a), 52 Stat. 1041 as amended, 1047-1048 as amended, 1055 (21 U.S.C. 321(n), 343, 371(a)); 21 CFR 5.10 and 5.11.

§ 102.33 [Removed]

2. By removing § 102.33 *Diluted fruit or vegetable juice beverages other than diluted orange juice beverages.*

Frank E. Young,
Commissioner of Food and Drugs.
Otis R. Bowen,
Secretary of Health and Human Services.

Dated: June 16, 1987.

[FR Doc. 87-16096 Filed 7-15-87; 8:45 am]
BILLING CODE 4160-01-M

DEPARTMENT OF DEFENSE

Office of the Secretary

32 CFR Part 276

Department of Defense (DoD) Program Fraud Civil Remedies Act

AGENCY: General Counsel, DoD.

ACTION: Proposed rule.

SUMMARY: The implementation of the DoD Program Fraud Civil Remedies Act is required by the Program Fraud Civil Remedies Act of 1986 (PFCRA), Pub. L. 99-509, (October 21, 1986), to be codified at 31 U.S.C. 3801through 3812. This regulation implements PFCRA by establishing an administrative process within the Department of Defense and the Departments of the Army, Navy and Air Force (hereinafter referred to as the "authorities") for the adjudication of fraudulent claims of less than $150,000 or false statements. It establishes a process for imposing liability of up to $5,000 per claim or statement and double damages on anyone who, with knowledge or reason to know submits a false, fictitious or fraudulent claim or statement to an authority. Procedurally, this regulation provides for the referral of matters, involving possible violations of PFCRA, from the Inspector General, DoD, (the "investigating official") to a reviewing official in each authority for evaluation and transmission of written notice, to the Attorney General, Department of Justice, of intent to refer allegations of liability under PFCRA to a presiding officer for adjudication. The Attorney General will provide written approval or disapproval for the referral of the allegations to a presiding officer for a formal hearing on the record. This regulation establishes procedures for an appeal of the presiding officer's decision to the authority head.

DATE: Comments must be submitted on or before August 17, 1987.

ADDRESS: Send comments to Department of Defense, Room 3E988, Washington, DC 20301-1600.

FOR FURTHER INFORMATION CONTACT: Edward J. Shapiro, Assistant General Counsel (Legal Counsel), telephone (202) 697-2714.

SUPPLEMENTARY INFORMATION:

A. Executive Order 12291

Executive Order 12291 requires the Department to prepare and publish an initial regulatory impact analysis for any proposed major rule. A major rule is defined as any regulation that is likely to: (1) Have an annual effect on the economy of $100 million of more; (2) cause a major increase in costs of prices for consumers, individual industries, Government Agencies, or geographic regions; or (3) result in significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

We have determined that these proposed regulations do not meet the criteria for a major rule as defined by section 1(b) of Executive Order 12291. In general, the proposed rule would establish procedures governing the scope and conduct of administrative adjudications to impose civil penalties and assessments upon persons who submit false claims or statements to the Department. As such, this proposed rule would have no direct effect on the economy or on Federal or State expenditures. Consequently, we have concluded that an initial regulatory impact analysis is not required.

B. Regulatory Flexibility Analysis

Consistent with the Regulatory Flexibility Act of 1980 (Pub. L. 96-453, 5 U.S.C. 604(a)), DoD prepared and publishes an initial regulatory flexibility analysis for proposed regulations unless the Secretary certifies that the regulation would not have a significant economic impact on a substantial number of small business entities. The analysis is intended to explain what effect the regulatory action by the agency would have on small businesses and other small entities and to develop lower cost or burden alternatives. As indicated above, these proposed regulations would not have a significant economic impact. While some of the penalties and assessments the Department could impose as a result of these regulations might have an impact on small entities, we do not anticipate that a substantial number of these small entities would be significantly affected by this rulemaking. Therefore, the Secretary certifies that these proposed regulations would not have a significant economic impact on a substantial number of small entities.

C. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1980 (Pub. L. 96-511), all Departments are required to submit to the Office of Management and Budget for review and approval any reporting or recordkeeping requirements contained in both proposed and final rules. It has been determined that this proposed rulemaking does not contain specific information collection requirements and would not increase the Federal paperwork burden on the public and private sector.

List of Subjects in 32 CFR Part 276

Fraud.

Accordingly, Title 32 is proposed to be amended to add Part 276 as follows:

PART 276—IMPLEMENTATION OF THE PROGRAM FRAUD CIVIL REMEDIES ACT

Sec.
276.1 Purpose.
276.2 Applicability.
276.3 Policy.
276.4 Responsibilities.

Authority: 31 U.S.C. 3807; Pub. L. 99-509; 100 Stat. 1874.

§ 276.1 Purpose.

This part establishes uniform policies and procedures and assigns responsibilities for implementation of the Program Fraud Civil Remedies Act and the DoD Program Fraud Civil Remedies Regulation (32 CFR Part 277).

§ 276.2 Applicability.

This Directive applies to the Office of the Secretary of Defense (OSD) and its field activities; the Office of the Inspector General, Department of Defense (OIG, DoD); the Military Department; and the Defense Agencies (hereafter referred to collectively as "DoD Components").

§ 276.3 Policy.

It is DoD policy to utilize effectively the appropriate remedies to redress fraud in DoD programs and operations. The Program Fraud Civil Remedies Act provides a new remedy for this purpose. All DoD components shall comply with the requirements of the DoD Program Fraud Civil Remedies regulation in utilizing this new remedy. Changes or modifications to that regulation by implementing organizations are prohibited. Additional implementing regulations are authorized only to the extent necessary to effectively carry out the requirements of the Program Fraud Civil Remedies Regulation.

§ 276.4 Responsibilities.

(a) *The Inspector General, DoD,* shall establish procedures for carrying out the duties and responsibilities of the "investigating official" as set forth in 32 CFR Part 277.

(b) *The General Counsel, DoD,* shall establish procedures for carrying out those duties and responsibilities of the "authority head," DoD, which have been delegated to the General Counsel as set forth in 32 CFR Part 277, shall establish procedures for carrying out the duties and responsibilities for appointment and support of presiding officers, as set forth in 32 CFR Part 277, and shall review and approve the regulations and instructions required by this section to be submitted for approval by the DoD General Counsel.

(c) *The Secretaries of the Military Departments* shall establish procedures for carrying out the duties and responsibilities of the "authority head," for their respective Departments, and for obtaining and supporting presiding officers from other agencies pursuant to the Office of Personnel Management regulations, as set forth in 32 CFR Part 277. All regulations or instructions promulgated pursuant hereto shall be subject to the approval of the General Counsel, DoD.

(d) *The Director of the National Security Agency and the General Counsel of the Defense Logistics Agency* shall be responsible for establishing procedures for carrying out the duties and responsibilities of the reviewing officials, which have been delegated to them, as set forth in 32 CFR Part 277. All regulations or instructions promulgated pursuant hereto shall be submitted to the Office of the General Counsel, DoD.

Linda M. Lawson,
Alternate OSD Federal Register Liaison Officer, Department of Defense.
July 10, 1987.

[FR Doc. 87-16108 Filed 7-15-87; 8:45 am]

BILLING CODE 3810-01-M

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32 CFR Part 277

Department of Defense (DoD) Program Fraud Civil Remedies Regulation

AGENCY: General Counsel, DoD.

ACTION: Public notice of proposed rulemaking and request for comments.

SUMMARY: The DoD Program Fraud Civil Remedies Regulation and the Implementation of the Program Fraud Civil Remedies Act is required by the Program Fraud Civil Remedies Act of 1986 (PFCRA), Pub. L. 99-509, (October 21, 1986), to be codified at 31 U.S.C. 3801-3812. This regulation implements PFCRA by establishing an administrative process within the Department of Defense and the Departments of the Army, Navy and Air Force (hereinafter referred to as the "authorities") for the adjudication of fraudulent claims of less than $150,000 or false statements. It establishes a process for imposing liability of up to $5000 per claim or statement and double damages on anyone who, with knowledge or reason to know submits a false, fictitious or fraudulent claim or statement to an authority. Procedurally, this part provides for the referral of matters, involving possible violations of PFCRA, from the Inspector General, DoD, (the "investigating official") to a reviewing official in each authority for evaluation and transmission of written notice, to the Attorney General, Department of Justice, of intent to refer allegations of liability under PFCRA to a presiding officer for adjudication. The Attorney General will provide written approval or disapproval for the referral of the allegations to a presiding officer for a formal hearing on the record. This regulation establishes procedures for an appeal of the presiding officer's decision to the authority head.

DATE: Comments must be submitted on or before August 17, 1987.

ADDRESS: Send comments to Department of Defense, Room 3E988, Washington, DC 20301-1600.

FOR FURTHER INFORMATION CONTACT: Edward J. Shapiro, Assistant General Counsel (Legal Counsel), telephone (202) 697-2714.

SUPPLEMENTARY INFORMATION:

A. Executive Order 12291

Executive Order 12291 requires the Department to prepare and publish an initial regulatory impact analysis for any proposed major rule. A major rule is defined as any regulation that is likely to: (1) Have an annual effect on the economy of $100 million or more; (2) cause a major increase in costs or prices for consumers, individual industries, Government Agencies, or geographic regions; or (3) result in significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

We have determined that these proposed regulations do not meet the criteria for a major rule as defined by section 1(b) of Executive Order 12291. In general, the proposed rule would establish procedures governing the scope and conduct of administrative adjudications to impose civil penalties and assessments upon persons who submit false claims or statements to the Department. As such, this proposed rule would have no direct effect on the economy or on Federal or State expenditures. Consequently, we have concluded that an initial regulatory impact analysis is not required.

B. Regulatory Flexibility Analysis

Consistent with the Regulatory Flexibility Act of 1980 (Pub. L. 96-453, 5 U.S.C. 604(a)), DoD prepares and publishes an initial regulatory flexibility analysis for proposed regulations unless the Secretary certifies that the regulation would not have a significant economic impact on a substantial number of small business entities. The analysis is intended to explain what effect the regulatory action by the agency would have on small businesses and other small entities and to develop lower cost or burden alternatives. As indicated above, these proposed regulations would not have a significant economic impact. While some of the penalties and assessments the Department could impose as a result of these regulations might have an impact on small entities, we do not anticipate that a substantial number of these small entities would be significantly affected by this rulemaking. Therefore, the Secretary certifies that these proposed regulations would not have a significant economic impact on a substantial number of small entities.

C. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1980 (Pub. L. 96-511), all Departments are required to submit to the Office of Management and Budget for review and approval any reporting or recordkeeping requirements contained in both proposed and final rules. It has been determined that this proposed rulemaking does not contain specific information collection requirements and would not increase the Federal paperwork burden on the public and private sector.

List of Subjects in 32 CFR Part 277

Fraud.

Accordingly, Title 32 is proposed to be amended to add Part 277 as follows:

PART 277—DEPARTMENT OF DEFENSE (DoD) PROGRAM FRAUD CIVIL REMEDIES REGULATION

Sec.
277.1 Scope and purpose.
277.2 General definitions.
277.3 Basis for civil penalties and assessments.
277.4 Investigation.

Sec.
277.5 Review by the reviewing official.
277.6 Prerequisites for issuing a complaint.
277.7 Complaint.
277.8 Service of complaint.
277.9 Answer.
277.10 Default upon failure to file an answer.
277.11 Referral of complaint and answer to the presiding officer.
277.12 Notice of hearing.
277.13 Parties to the hearing.
277.14 Separation of functions.
277.15 Ex parte contacts.
277.16 Disqualification of presiding officer.
277.17 Right of parties.
277.18 Authority of the presiding officer.
277.19 Prehearing conferences.
277.20 Disclosure of documents.
277.21 Discovery.
277.22 Exchange of witness lists, statements and exhibits.
277.23 Subpoenas for attendance at hearing.
277.24 Protective order.
277.25 Fees.
277.26 Form, filing and service of papers.
277.27 Computation of time.
277.28 Motions.
277.29 Sanctions.
277.30 The hearing and burden of proof.
277.31 Determining the amount of penalties and assessments.
277.32 Location of hearing.
277.33 Witnesses.
277.34 Evidence.
277.35 The record.
277.36 Post hearing briefs.
277.37 Initial decision.
277.38 Reconsideration of initial decision.
277.39 Appeal to authority head.
277.40 Stays ordered by the Department of Justice.
277.41 Stay pending appeal.
277.42 Judicial review.
277.43 Collection of civil penalties and assessments.
277.44 Right to administrative offset.
277.45 Deposit in Treasury of United States.
277.46 Compromise or settlement.
277.47 Limitations.
277.48 Delegations.

Authority: 31 U.S.C. 3807; Pub. L. 99–509; 100 Stat. 1874.

§ 277.1 Scope and purpose.

(a) The Department of Defense (DoD) has the authority to impose civil penalties and assessments against persons who make, submit, or present, or cause to be made, submitted, or presented, false, fictitious, or fraudulent claims or written statements to authorities or to their agents.

(b) This part—

(1) Establishes administrative procedures for imposing civil penalties and assessments against persons who make, submit, or present, or cause to be made, submitted, or presented, false, fictitious, or fraudulent claims or written statements to authorities or to their agents,

(2) Specifies the hearing and appeal rights of persons subject to allegations of liability for such penalties and assessment.

(c) The uniform procedures established by this part are binding on the authorities and authority heads in the Department of Defense and Military Departments. Additional administrative part necessary to carry out the requirements of the PFCRA and this regulation may be promulgated by the authority heads. Any such regulations must be consistent with the provisions of this part.

§ 277.2 General definitions.

(a) *Adequate evidence.* A reasonable ground for belief in the existence of facts, warranting a cause of action under this Act.

(b) *Authority.* (1) The Department of Defense, which includes the Office of the Secretary of Defense and its field activities, the Organization of the Joint Chiefs of Staff, the Unified and Specified Commands and the Defense Agencies.

(2) The Department of the Army.

(3) The Department of the Navy.

(4) The Department of the Air Force.

(c) *Authority head.* (1) For the Department of Defense, the Deputy Secretary of the Department of Defense or an official or employee of the Department of Defense or the Military Departments designated *in regulations* promulgated by the Deputy Secretary to act on behalf of the Deputy Secretary.

(2) for the respective Military Departments, the Secretary of the Military Department or an official or employee of the Military Department designated *in regulations* promulgated by the Secretary , to act on behalf of the Secretary.

(d) *Benefits.* Except as the context otherwise requifes, anything of value, including but not limited to any advantage, preference, privilege, license, permit, favorable decision, ruling status, or loan guarantee.

(e) *Claim.* Any request, demand, or submission—

(1) Made to the authority for property, services, or money (including money representing grants, loans, insurance, or benefits).

(2) Made to a recipient of property, services, or money from the authority or to a party to a contract with the authority

(i) For property or services if the United States—

(A) Provided such property or services;

(B) Provided any portion of the funds for the purchase of such property or services; or

(C) Will reimburse such recipient or party for the purchase of such property or services; or

(ii) For the payment of money (including money representing grants, loans, insurance, or benefits) if the United States—

(A) Provided any poetion of the money requested or demanded;

(B) Will reimburse such recipient or party for any portion of the money paid on such request or demand; or

(iii) Made to the authority which has the effect of decreasing an obligation to pay or account for property, services or money.

(f) *Complaint.* The administrative complaint served by the reviewing official on the defendant under § 277.7.

(g) *Defendant.* Any person alleged in a complaint under § 277.7 to be liable for a civil penalty or assessment under § 277.3.

(h) *DoD criminal investigative organizations.* The United States Army Criminal Investigative Command; Naval Security and Investigative Command; United States Air Force Office of Special Investigations; and the Defense Criminal Investigative Service.

(i) *Government.* The United States Government.

(j) *Individual.* A natural person.

(k) *Initial decision.* The written decision of the presiding officer required by § 277.10 or § 277.37, and includes a revised initial decision issued following a remand or a motion of reconsideration.

(l) *Investigating official.* The Inspector General of the Department of Defense or—

(1) An officer or employee of The Office of the Inspector General designated by the Inspector General;

(2) Who, if a member of the Armed Forces of the United States on active duty, is serving in Grade O–7 or above or, if a civilian employee, is serving in a position for which the rate of basic pay is not less than the minimum rate of basic pay for Grade GS–16 under the General Schedule.

(m) *Knows or has reason to know.* A person, with respect to a claim or statement—

(1) Has actual knowledge that the claim or statement is false, fictitious, or fraudulent;

(2) Acts in deliberate ignorance of the truth or falsity of the claim or statement; or

(3) Acts in reckless disregard of the truth or falsity of the claim or statement.

(n) *Makes.* Wherever it appears, shall include the terms presents, submits, and causes to be made, presented, or submitted. As the context requires, *making* or *made* shall likewise include the corresponding forms of such terms.

(o) *Person.* Any individual, partnership, corporation, association, private organization, state, political subdivision of a State, municipality, county, district, and Indian tribe, and includes the plural of that term.

(p) *Preponderance of the evidence.* The evidence necessary to support a presiding officer's decision that a violation of the PPCRA has occurred. That evidence which when fairly considered, has greater weight, produces a stronger impression and is more convincing as to the truth of the proposition for which it is offered than the evidence in opposition.

(q) *Presiding officer.* An officer or employee of the Department of Defense or an employee detailed from another agency pursuant to procedures established by the Office of Personnel Management who—

(1) Is selected under Chapter 33 of Title 5 pursuant to the competitive examination process applicable to administrative law judges;

(2) Is appointed by the authority head of DoD to conduct hearings under this part, for cases arising in DoD or the Military Departments;

(3) Is assigned to cases in rotation so far as practicable;

(4) May not perform duties inconsistent with the duties and responsibilities of a presiding officer;

(5) Is entitled to pay prescribed by the Office of Personnel Management independently of ratings and recommendations made by the authority and in accordance with Chapter 51 of such title and Subchapter III of Chapter 53 of such title;

(6) Is not subject to performance appraisal pursuant to Chapter 43 of such title; and

(7) May be removed, suspended, furloughed, or reduced in grade or pay only for good cause established and determined by the Merit Systems Protection Board on the record after opportunity for hearing by such Board.

(r) *Representative.* An attorney at law duly licensed in any state, commonwealth, territory, the District of Columbia or foreign country, who enters his appearance in writing, to represent a party in a proceeding under this part.

(s) *Reviewing official.* (1) In all cases arising in the Department of Defense and any of the Military Departments the reviewing official shall be an officer or employee of an authority—

(i) Who is designated by the authority head to make the determination required under § 277.5 of this part;

(ii) Who, is a member of the Armed Forces of the United States on active duty, is serving in Grade 0–7 or above or, if a civilian employee, is serving in a position for which the rate of basic pay is not less than the minimum rate of basic pay for Grade GS–16 under the General Schedule; and

(iii) Who is—

(A) Not subject to supervision by, or required to report to, the investigating official;

(B) Not employed in the organizational unit of the authority in which the investigating official is employed; and

(C) Not an official designated to make suspension or debarment decisions.

(2) The General Counsel, Defense Logistics Agency will be the reviewing official for all cases involving a claim or statement made to the Defense Logistics Agency or any other part of the Department of Defense other than a Military Department of the National Security Agency. The General Counsel, National Security Agency will be the reviewing official for all cases involving claims or statements made to that agency. The Director, Defense Logistics Agency, and General Counsel, National Security Agency may redelegate their authority to act as reviewing officials to any individual(s) meeting the criteria set out in paragraph (s)(1) of this section.

(3) Each Military Department shall select a reviewing official, who shall review all cases involving a claim or statement which was made to their Department.

(t) *Statement.* Any written representation, certification, affirmation, document, record, or accounting or bookkeeping entry made—

(1) With respect to a claim or to obtain the approval or payment of a claim (including relating to eligibility to make a claim); or

(2) With respect to (including relating to eligibility for)

(i) A contract with, or a bid or proposal for a contract with; or

(ii) A grant, loan, or benefit from;

(iii) The authority, or any State, political subdivision of a State, or other party, if the United States Government provides any portion of the money or property under such contract or for such grant, loan, or benefit, or if the Government will reimburse such State, political subdivision, or party for any portion of the money or property under such contract or for such grant, loan, or benefit.

§277.3 Basis for civil penalties and assessments.

(a) Claims. (1) Any person who makes a claim that the person knows or has reason to know—

(i) Is false, fictitious, or fraudulent;

(ii) Includes or is supported by a written statement which asserts a material fact which is false, fictitious, or fraudulent;

(iii) Includes or is supported by any written statement that;

(A) Omits a material fact;

(B) Is false, fictitious, or fraudulent as a result of such omission; and

(C) Is a statement in which the person making such statement has a duty to include such material fact; or

(iv) Is for payment for the provision of property or services shall be subject, in addition to which the person had not provided as claimed, any other remedy that may be prescribed by law, to a civil penalty of not more than $5,000 for each such claim.

(2) Each voucher, invoice, claim form, or other individual request or demand for property, services, or money constitutes a separate claim.

(3) A claim shall be considered made to an authority, recipient, or party when such claim is received by an agent, fiscal intermediary, or other entity, including any State or political subdivision thereof, acting for or on behalf of such authority, recipient, or party.

(4) Each claim for property, services, or money is subject to a civil penalty regardless of whether such property, services, or money is actually delivered or paid.

(5) If the Government has made any payment (including transferred property or provided services) on a claim, a person subject to a civil penalty under paragraph (a)(1) of this section shall also be subject to an assessment of not more than twice the amount of such claim or that portion thereof that is determined to be in violation of paragraph (a)(1) of this section. Such assessment shall be in lieu of damages sustained by the Government because of such claim.

(b) *Statements.* (1) Any person who makes a written statement that—

(i) The person knows or has reason to know

(A) Asserts a material fact which is false, fictitious, or fraudulent; or

(B) Is false, fictitious, or fraudulent because it omits a material fact that the person making the statement has a duty to include in such statement; and

(ii) Contains or is accompanied by an express certification or affirmation of the truthfulness and accuracy of the contents of the statement, shall be subject, in addition to any other remedy that may be prescribed by law, to a civil penalty of not more than $5,000 for each such statement.

(2) Each written representation, certification, or affirmation constitutes a separate statement.

(3) A statement shall be considered made to an authority when such statement is received by an agent, fiscal intermediary, or other entity, including any State or political subdivision thereof, acting for or on behalf of such authority.

(c) No proof of specific intent to defraud is required to establish liability under this section.

(d) In any case in which it is determined that more than one person is liable for making a claim or statement under this section, each such person may be made liable for a civil penalty under this section.

(e) In any case in which it is determined that more than one person is liable for making a claim under this section on which the Government has made payment (including transferred property or provided services), an assessment may be imposed against any such person or jointly and severally against any combination of such persons.

§ 277.4 Investigation.

(a) If the investigating official concludes that a subpoena pursuant to the authority conferred by 31 U.S.C. 3804(a) is warranted—

(1) The subpoena so issued shall notify the person to whom it is addressed of the authority under which the subpoena is issued and shall identify the records or documents sought;

(2) He or she may designate a person to act on his behalf to receive the documents sought; and

(3) The person receiving such subpoena shall be fequired to tender to the investigating official or the person designated to receive the documents a certification that the documents sought have been produced, or that such documents are not available and the feasons therefor, or that such documents, suitably identified, have been withheld based upon the assertion of an identified privilege.

(b) If the investigating official concludes that an action under the Program Fraud Civil Remedies Act may be warranted, the investigating official shall submit a report containing the findings and conclusions of such investigation to the reviewing official who has responsibility for the component of the authority to which the false claim or false statement submitted.

(c) Nothing in this section shall preclude or limit an investigating official's discretion to refer allegations directly to the Department of Justice for suit under the False Claims Act or other civil relief, or to preclude of limit such official's discretion to defer or postpone a report or referral to avoid interference with a criminal investigation or prosecution.

(d) Nothing in this section modifies any responsibility of an investigating official to report violations of criminal law to the Attorney General.

(e) Nothing in this section shall preclude or limit the investigating official's authority to obtain the assistance of any of investigative units of the Department of Defense, including those of the Military Departments. In this regard appropriate investigation may be conducted by the Defense criminal investigative organizations and other investigative elements of the Military Departments and Defense Agencies.

§ 277.5 Review by the reviewing official.

(a) If, based on the report of the investigating official under § 277.4(b), the reviewing official determines that there is adequate evidence to believe that a person is liable under § 277.3, the reviewing official shall transmit to the Attorney General or his designated point of coordination within the Department of Justice a written notice of the reviewing official's intention to issue a complaint under § 277.7.

(b) Such notice shall include—

(1) A statement of the reviewing official's reasons for issuing a complaint;

(2) A statement specifying the evidence that supports the allegations of liability;

(3) A description of the claims of statements upon which the allegations of liability are based;

(4) An estimate of the amount of money or the value of property, services, or other benefits requested or demanded in violation of § 277.3;

(5) A statement of any exculpatory or mitigating circumstances that may relate to the claims or statements known by the reviewing official or the investigating official; and

(6) A statement that there is a reasonable prospect of collecting an appropriate amount of penalties and assessments. Such a statement may be based upon information then known or an absence of any information indicating that the person may be unable to pay such an amount.

§ 277.6 Prerequisites for issuing a complaint.

(a) The reviewing official may issue a complaint under § 277.7 only if—

(1) The Department of Justice approves the issuance of a complaint in a written statement described in 31 U.S.C. 3803(b)(1); and

(2) In the case of allegations of liability under § 277.3(a) with respect to a claim, the reviewing official determines that, with respect to such claim or a group of related claims submitted at the same time such claim is submitted (as defined in paragraph (b) of this section), the amount of money or the value of property or services demanded or requested in violation of § 277.3(a) does not exceed $150,000.00.

(b) For the purposes of this section, a related group of claims submitted at the same time shall include only those claims arising from the same transaction (e.g., grant, loan, application, or contract) that are submitted simultaneously as part of a single request, demand, or submission.

(c) Nothing in this section shall be construed to limit the reviewing official's authority to join in a single complaint against a person claims that are unrelated or were not submitted simultaneously, regardless of the amount of money or the value of property or services demanded or requested.

(d) In any case, which involves claims or statements made to more than one entity, within the Department of Defense or the Military Departments, the reviewing officials having responsibility for each such entity, as set forth in § 277.1(r) (1), (2) and (3), shall have concurrent jurisdiction to make the required determinations under this section. In any such case, the responsible reviewing officials shall coordinate with each other prior to making any determination under this section. The requirements of this paragraph do not confer any procedural or substantive rights, upon individuals, associations, corporations, or other persons or entities who might become defendants under the PRCRA.

§ 277.7 Complaint.

(a) On or after the date the Department of Justice approves the issuance of a complaint in accordance with 31 U.S.C. 3803(b)(1), the reviewing official may serve a complaint on the defendant, as provided in § 277.8.

(b) The complaint shall state—

(1) The allegations of liability against the defendant, including the statutory basis for liability, an identification of the claims or statements that are the basis for the alleged liability, and the reasons why liability allegedly arises from such claims or statements;

(2) The maximum amount of penalties and assessments for which the defendant may be held liable;

(3) Instructions for filing an answer to request a hearing, including a specific

statement of the defendant's right to request a hearing by filing an answer and to be represented by a representative; and

(4) That failure to file an answer within 30 days of service of the complaint will result in the imposition of the maximum amount of penalties and assessments without right to appeal.

(c) At the same time the reviewing official serves the complaint, he or she shall serve the defendant with a copy of these regulations and any other applicable regulations issued hereunder.

§ 277.8 Service of complaint.

(a) Service of a complaint must be made by certified or registered mail of by delivery in any manner authorized by Rule 4(d) of the Federal Rules of Civil Procedure.

(b) Proof of service, stating the name and address of the person on whom the complaint was served, and the manner and date of service, may be made by—

(1) Affidavit of the individual making service;

(2) An acknowledged United States Postal Service return receipt card; or

(3) Written acknowledgement of the defendant or his representative.

§ 277.9 Answer.

(a) The defendant may request a hearing by filing an answer with the reviewing official within 30 days of service of the complaint. An answer shall be deemed to be a request for hearing.

(b) In the answer, the defendant—

(1) Shall admit or deny each of the allegations of liability made in the complaint;

(2) Shall state any defense on which the defendant intends to rely;

(3) May state any reasons why the defendant contends that the penalties and assessments should be less than the statutory maximum; and

(4) Shall state the name, address, and telephone number of the person authorized by the defendant to act as defendant's representative, if any.

§ 277.10 Default upon failure to file an answer.

(a) If the defendant does not file an answer within the time prescribed in § 277.9(a), the reviewing official may then refer the complaint to the presiding officer.

(b) Upon the referral of the complaint pursuant to this section, the presiding officer shall promptly serve on defendant in the manner prescribed in § 277.8, a notice that an initial decision will be issued under this section.

(c) If the defendant fails to answer within the time prescribed by § 277.9(a), the presiding officer shall assume the facts alleged in the complaint to be true and, if such facts establish liability under § 277.3, the presiding officer shall issue an initial decision imposing the maximum amount of penalties and assessments allowed under the statute.

(d) Except as otherwise provided in this section, by failing to file a timely answer the defendant waives any right to further review of the penalties and assessments imposed under paragraph (c) of this section, and the initial decision shall become final and binding upon the parties 30 days after it is issued.

(e) If, before such an initial decision becomes final, the defendant files a motion with the presiding officer seeking to reopen on the grounds that extraordinary circumstances prevented the defendant from filing an answer, the initial decision shall be stayed pending the presiding officer's decision on the motion.

(f) If, on such motion, the defendant can demonstrate extraordinary circumstances excusing the failure to file a timely answer, the presiding officer shall withdraw the initial decision in paragraph (c) of this section, if such a decision has been issued, and shall grant the defendant an opportunity to answer the complaint.

(g) A decision of the presiding officer denying a defendant's motion under paragraph (e) of this section is not subject to reconsideration under § 277.38.

(h) The defendant may appeal to the authority head the decision denying a motion to reopen by filing a notice of appeal with the authority head within 15 days after the presiding officer denies the motion. The timely filing of a notice of appeal shall stay the initial decision until the authority head decides the issue.

(i) If the defendant files a timely notice of appeal with the authority head, the presiding officer shall forward the record of the proceeding to the authority head.

(j) The authority head shall decide expeditiously whether extraordinary circumstances excuse the defendant's failure to file a timely answer based solely on the record before the presiding officer.

(k) If the authority head decides that extraordinary circumstances excused the defendant's failure to file a timely answer, the authority head shall remand the case to the presiding officer with instructions to grant the defendant an opportunity to answer.

(l) If the authority head decides that the defendant's failure to file a timely answer is not excused, the authority head shall aprove the initial decision of the presiding officer, which shall become final and binding upon the parties 30 days after the authority head issues such decision.

§ 277.11 Referral of complaint and answer to the presiding officer.

Upon receipt of an answer, the reviewing official shall file the complaint and answer with the presiding officer.

§ 277.12 Notice of hearing.

(a) When the presiding officer receives the complaint and answer, the presiding officer shall promptly serve a notice of hearing upon the defendant in the manner prescribed by § 277.8. At the same time, the presiding officer shall send a copy of such notice to the representative for the Government.

(b) Such notice shall include—

(1) The tentative time and place, and the nature of the hearing;

(2) The legal authority and jurisdiction under which the hearing is to be held;

(3) The matters of fact and law to be asserted;

(4) A description of the procedures for the conduct of the hearing;

(5) The name, address, and telephone number of the representative of the Government, the defendant and other parties, if any; and

(6) Such other matters as the presiding officer deems appropriate.

§ 277.13 Parties to the hearing.

(a) The parties to the hearing shall be the defendant and the authority. The reviewing official shall designate attorneys within the authority to represent the authority in hearings conducted under this part.

(b) Pursuant to 31 U.S.C. 3730(c)(5), a private plaintiff under the False Claims Act may participate in these proceedings to the extent authorized by the provisions of the False Claims Act.

§ 277.14 Separation of functions.

(a) The investigating officials, the reviewing official, and any employee or agent of the authority who takes part in investigating, preparing, or presenting a particular case may not, in such a case or a factually related case—

(1) Participate in the hearing as the presiding officer;

(2) Participate or advise in the initial decision or the review of the initial decision by the authority head, except as a witness or a representative in public proceedings; or

(3) Make the collection of penalties and assessments under 31 U.S.C. 3806.

(b) The presiding officer shall not be responsible to, or subject to the supervision or direction of the investigating official or the reviewing official.

(c) Except as provided in paragraph (a) of this section, the representative for the Government may be employed anywhere in the authority, including in the offices of either the investigating official or the reviewing official.

§ 277.15 Ex parte contacts.

No party or person (except employees of the presiding officer's office) shall communicate in any way with the presiding officer on any matter at issue in a case, unless on notice and opportunity for all parties to participate. This provision does not prohibit a person or party from inquiring about the status of a case or asking routine questions concerning administrative functions or procedures.

§ 277.16 Disqualification of presiding officer.

(a) A reviewing official or presiding officer in a particular case may disqualify himself or herself at any time.

(b) A party may file with the presiding officer a motion for disqualification of the presiding officer. Such motion shall be accompanied by an affidavit alleging personal bias or other reason for disqualification.

(c) Such motion and affidavit shall be filed promptly upon the party's discovery of reasons requiring disqualification, or such objections shall be deemed waived.

(d) Such affidavit shall state specific facts that support the party's belief that personal bias or other reason for disqualification exists and the time and circumstances of the party's discovery of such facts. It shall be accompanied by a certificate of the representative of record that it is made in good faith.

(e) Upon the filing of such a motion and affidavit, the presiding officer shall proceed no further in the case until he or she resolves the matter of disqualification by taking one of the following actions:

(1) If the presiding officer disqualified himself or herself, the case shall be reassigned promptly to another presiding officer.

(2) The presiding officer may deny a motion to disqualify. In such event, the authority head may determine the matter only as part of his or her review of the initial decision upon appeal, if any.

§ 277.17 Rights of parties.

Except as otherwise limited by this part, all parties may—

(a) Be accompanied, represented, and advised by a representative;

(b) Participate in any conference held by the presiding officer;

(c) Conduct discovery;

(d) Agree to stipulations of fact or law, which shall be made part of the record;

(e) Present evidence relevant to the issues at the hearing;

(f) Present and cross-examine witnesses;

(g) Present oral arguments at the hearing as permitted by the presiding officer; and

(h) Submit written briefs and proposed findings of fact and conclusions of law after the hearing.

§ 277.18 Authority of the presiding officer.

(a) The presiding officer shall conduct a fair and impartial hearing, avoid delay, maintain order, and assure that a record of the proceeding is made.

(b) The presiding officer has the authority to—

(1) Set and change the date, time, and place of the hearing upon reasonable notice to the parties.

(2) Continue or recess the hearing in whole or in part for a reasonable period of time;

(3) Hold conferences to identify or simplify the issues, or to consider other matters that may aid in the expeditious disposition of the proceeding;

(4) Administer oaths and affirmations;

(5) Issue subpoenas requiring the attendance of witnesses and the production of documents at depositions or at hearings;

(6) Rule on motions and other procedural matters;

(7) Regulate the scope and timing of discovery;

(8) Regulate the course of the hearing and the conduct of representatives and parties;

(9) Examine witnesses;

(10) Receive, rule on, exclude, or limit evidence;

(11) Upon motion of a party, take official notice of facts;

(12) Upon motion of a party, decide cases, in whole or in part, by summary judgment where there is no dispute issue of material fact;

(13) Conduct any conference, argument, or hearing on motions in person or by telephone; and

(14) Exercise such other authority as is necessary to carry out the responsibilities of the presiding officer under this part.

(c) The presiding officer does not have the authority to decide upon the validity of Federal statutes or regulations.

§ 277.19 Prehearing conferences.

(a) The presiding officer may schedule prehearing conferences as appropriate.

(b) Upon the motion of any party, the presiding officer shall schedule at least one prehearing conference at a reasonable time in advance of the hearing.

(c) The presiding officer may use prehearing conferences to discuss the following:

(1) Simplification of the issues;

(2) The necessity or desirability of amendments to the pleadings, including the need for a more definite statement;

(3) Stipulations or admissions of fact or as to the contents and authenticity of documents;

(4) Whether the parties can agree to submission of the case on a stipulated record;

(5) Whether a party chooses to waive appearance at an oral hearing and to submit only documentary evidence (subject to the objections of other parties) and written argument;

(6) Limitation of the number of witnesses;

(7) Scheduling dates for the exchange of witness lists and of proposed exhibits;

(8) Discovery;

(9) The time and place for the hearing; and

(10) Such other matters as may tend to expedite the fair and just disposition of the proceedings.

(d) The presiding officer may issue an order containing all matters agreed upon by the parties or ordered by the presiding officer at a prehearing conference.

§ 277.20 Disclosure of documents.

(a) Upon written request to the reviewing official, the defendant may review any relevant and material documents, transcripts, records, and other materials that relate to the allegations set out in the complaint and upon which the findings and conclusions of the investigating official under § 277.4(b) are based unless such documents are subject to a privilege under Federal law. Upon payment of fees for duplication, the defendant may obtain copies of such documents.

(b) Upon written request to the reviewing official, the defendant also may obtain a copy of all exculpatory information in the possession of the reviewing official or investigation official relating to the allegations in the complaint, even if it is contained in a document that would otherwise be privileged. If the document would otherwise be privileged, only that portion containing exculpatory information must be disclosed.

(c) The notice sent to the Attorney General from the reviewing official as described in § 277.5 is not discoverable under any circumstances.

(d) The defendant may file a motion to compel disclosure of the documents subject to the provisions of this section. Such a motion may only be filed with the presiding officer following the filing of an answer pursuant to § 277.9.

§ 277.21 Discovery.

(a) The following types of discovery are authorized:

(1) Requests for production of documents for inspection and copying;

(2) Requests for admissions of the authenticity of any relevant document or of the truth of any relevant fact;

(3) Written interrogatories; and

(4) Depositions.

(b) For the purpose of this section and §§ 277.22 and 277.23, the term "documents" includes information, documents, reports, answers, records, accounts, papers, and other data and documentary evidence. Nothing contained herein shall be interpreted to require the creation of a document.

(c) Unless mutually agreed to by the parties, discovery is available only as ordered by the presiding officer. The presiding officer shall regulate the timing of discovery.

(d) Motions for discovery may be filed with the presiding officer by the party seeking discovery.

(1) Such a motion shall be accompanied by a copy of the requested discovery, or in the case of depositions, a summary of the scope of the proposed deposition.

(2) Within ten days of service, a party may file an opposition to the motion and/or a motion for protective order as provided in § 277.24.

(3) The presiding officer may grant a motion for discovery only if he finds that the discovery sought—

(i) Is necessary for the expeditious, fair, and reasonable consideration of the issues;

(ii) Is not unduly costly or burdensome;

(iii) Will not unduly delay the proceeding; and

(iv) Does not seek privileged information.

(4) The burden of showing that discovery should be allowed is on the party seeking discovery.

(5) The presiding officer may grant discovery subject to a protective order under § 277.24.

(e) *Depositions.* (1) If a motion for deposition is granted, the presiding officer shall issue a subpoena for the deponent, which may require the deponent to produce documents. The subpoena shall specify the time and place at which the deposition will be held.

(2) The party seeking to depose shall serve the subpoena in the manner prescribed in § 277.8.

(3) The deponent may file with the presiding officer a motion to quash the subpoena or a motion for a protective order within ten days of service.

(4) The party seeking to depose shall provide for the taking of a verbatim transcript of the deposition, which it shall make available to all parties for inspection and copying.

(f) Each party shall bear its own costs of discovery.

§ 277.22 Exchange of witness lists, statements and exhibits.

(a) At least 15 days before the hearing or at such other time as may be ordered by the presiding officer, the parties shall exchange witness lists, copies of prior statements of proposed witnesses, and copies of proposed hearing exhibits, including copies of any written statements that the party intends to offer in lieu of live testimony in accordance with § 277.33(b). At the time the above documents are exchanged, any party that intends to rely on the transcript of deposition testimony in lieu of live testimony at the hearing, if permitted by the presiding officer, shall provide each party with a copy of the specific pages of the transcript it intends to introduce into evidence.

(b) If a party objects, the presiding officer shall not admit into evidence the testimony of any witness whose name does not appear on the witness list or any exhibit not provided to the opposing party as provided above unless the presiding officer finds good cause for the failure or that there is no prejudice to the objecting party.

(c) Unless another party objects within the time set by the presiding officer, documents exchanged in accordance with paragraph (a) of this section shall be admitted into evidence at the hearing.

§ 277.23 Subpoenas for attendance at hearing.

(a) A party wishing to procure the appearance and testimony of any individual at the hearing may request that the presiding officer issue a subpoena.

(b) A subpoena requiring the attendance and testimony of an individual may also require the individual to produce documents at the hearing.

(c) A party seeking a subpoena shall file a written request therefore not less than 15 days before the date fixed for the hearing unless otherwise allowed by the presiding officer for good cause shown. Such request shall specify any documents to be produced and shall designate the witnesses and describe the address and location thereof with sufficient particularity to permit such witnesses to be found.

(d) The subpoena shall specify the time and place at which the witness is to appear and any documents the witness is to produce.

(e) The party seeking the subpoena shall serve it in the manner prescribed in § 277.8. A subpoena on a party or upon an individual under the control of a party may be served by first class mail.

(f) A party of the individual to whom the subpoena is directed may file with the presiding officer a motion to quash the subpoena within ten days after service or on or before the time specified in the subpoena for compliance if it is less than ten days after service.

§ 277.24 Protective order.

(a) A party or a prospective witness or deponent may file a motion for a protective order with respect to discovery sought by an opposing party or with respect to the hearing, seeking to limit the availability or disclosure of evidence.

(b) In issuing a protective order, the presiding officer may make any order which justice requires to protect a party or person from annoyance, embarrassment, oppression, or undue burden or expense, including one or more of the following:

(1) That the discovery not be had;

(2) That the discovery may be had only on specified terms and conditions, including a designation of the time or place;

(3) That the discovery may be had only through a method of discovery other than that requested;

(4) That classified information not be released unless prior notice and arrangements reasonably acceptable to representative of the authority are made, and the presiding officer agrees to the use;

(5) That certain matters not be inquired into, or that the scope of discovery be limited to certain matters;

(6) That discovery be conducted with no person except persons designated by the presiding officer;

(7) That the contents of discovery or evidence be sealed;

(8) That the defendant comply with 32 CFR Part 97 concerning official witnesses;

(9) That a deposition after being sealed be opened only upon order of the presiding officer;

(10) That a trade secret or other confidential research, development, commercial information, or facts pertaining to any criminal investigation, proceeding, or other administrative investigation not be disclosed or be disclosed only in a designated way; or

(11) That the parties simultaneously file specified documents of information enclosed in sealed envelopes to be opened as directed by the presiding officer.

§ 277.25 Fees.

The party requesting a subpoena shall pay the cost of the fees mileage of any witness subpoenaed in the amounts that would be payable to a witness in a proceeding in the United States District Court. A check for witness fees and mileage shall accompany the subpoena when served, except that when a subpoena is issued on behalf of the authority, a check for witness fees and mileage need not accompany the subpoena.

§ 277.26 Form, filing and service of papers.

(a) *Form.* (1) Documents filed with the presiding officer shall include an original and two copies.

(2) Every pleading and paper filed in the proceeding shall contain a caption setting forth the title of the action, the case number assigned by the presiding officer, and a designation of the paper (e.g., motion to quash subpoena).

(3) Every pleading and paper shall be signed by, and shall contain the address and telephone number of the party or the person on whose behalf the paper was filed, or his or her representative.

(4) Papers are considered filed when they are mailed. Date of mailing may be established by a certificate from the party or its representative or by proof that the document was sent by certified or registered mail.

(b) *Service.* A party filing a document with the presiding officer shall, at the time of filing, serve a copy of such document on every other party. Service upon any party of any document other than the complaint or notice of hearing shall be made by delivering or mailing a copy to the party's last known address. When a party is represented by a representative, service shall be made upon such representative in lieu of the actual party.

(c) *Proof of service.* A certificate of the individual serving the document by personal delivery or by mail, setting forth the manner of service, shall be proof of service.

§ 277.27 Computation of time.

(a) In computing any period of time under this part or in an order issued thereunder, the time begins with the day following the act, event, or default, and includes the last day of the period, unless it is a Saturday, Sunday, or legal holiday observed by the Federal government, in which event it includes the next business day.

(b) When the period of time allowed is less than seven days, intermediate Saturdays, Sundays, and legal holidays observed by the Federal government shall be excluded from the computation.

(c) Where a document has been served or issued by mail, an additional five days will be added to the time permitted for any response.

§ 277.28 Motions.

(a) Any application to the presiding officer for an order or ruling shall be by motion. Motions shall state the relief sought, the authority relied upon, and the facts alleged, and shall be filed with the presiding officer and served on all other parties.

(b) Except for motions made during a prehearing conference or at the hearing, all motions shall be in writing. The presiding officer may require the oral motions be reduced to writing.

(c) Within 15 days after a written motion is served, or such other time as may be fixed by the presiding officer, any party may file a response to such motion.

(d) The presiding officer may not grant a written motion before the time for filing responses thereto has expired, except upon consent of the parties or following a hearing on the motion, but may overrule or deny such motion without awaiting a response.

(e) The presiding officer shall make a reasonable effort to dispose of all outstanding motions prior to the beginning of the hearing.

(f) Failure by a party to raise defenses or objections or to make requests which must be made prior to the beginning of the hearing shall constitute waiver thereof, but the presiding officer may grant relief from the waiver for good cause shown.

§ 277.29 Sanctions.

(a) The presiding officer may sanction a person, including any party or representative for

(1) Failing to comply with an order, rule, or procedure governing the proceeding;

(2) Failing to prosecute or defend an action; or

(3) Engaging in other misconduct that interferes with the speedy, orderly, or fair conduct of the hearing.

(b) Any such sanction, including but not limited to those listed in paragraphs (c), (d), and (e) of this section, shall reasonably relate to the severity and nature of the failure or misconduct.

(c) When a party fails to comply with an order, including an order for taking a deposition, the production of evidence within the party's control, or a request for admission, the presiding officer may

(1) Draw an inference in favor of the requesting party with regard to the information sought;

(2) In the case of requests for admission, deem each matter of which an admission is requested to be admitted;

(3) Prohibit the party failing to comply with such order from introducing evidence concerning, or otherwise relying upon testimony relating to the information sought; and

(4) Strike any part of the pleadings or other submission of the party failing to comply with such request.

(d) If a party fails to prosecute or defend an action under this part commenced by service of a notice of hearing, the presiding officer may dismiss the action or may issue an initial decision imposing penalties and assessments.

(e) The presiding officer may refuse to consider any motion, request, response, brief or other document which is not filed in a timely fashion.

§ 277.30 The hearing and burden of proof.

(a) The presiding officer shall conduct a hearing on the record in order to determine whether the defendant is liable for a civil penalty or assessment under § 277.3 and, if so, the appropriate amount of any such civil penalty or assessment considering any aggravating or mitigating factors.

(b) The authority shall prove defendant's liability and any aggravating factors by a preponderance of the evidence.

(c) The defendant shall prove any affirmative defenses and any mitigating factors by a preponderance of the evidence.

(d) The hearing shall be open to the public unless otherwise ordered by the presiding officer for good cause shown.

§ 277.31 Determining the amount of penalties and assessments.

In determining an appropriate amount of civil penalties and assessments, the presiding officer and the authority head, upon appeal, should evaluate any circumstances that mitigate or aggravate the violation and should articulate in their opinions the reasons that support the penalties and assessments they impose. Because of the intangible costs of fraud, the expense of investigating such conduct, and the need to deter others who might be similarly tempted, ordinarily double damages and a significant civil penalty should be imposed.

§ 277.32 Location of hearing.

(a) The hearing may be held—

(1) In any judicial district of the United States in which the defendant resides or transacts business;

(2) In any judicial district of the United States in which the claim or statement in issue was made; or

(3) In such other place, including foreign countries, as may be agreed upon by the defendant and the presiding officer.

(b) Each party shall have the opportunity to present argument with respect to the location of the hearing.

(c) The hearing shall be held at the place and at the time ordered by the presiding officer.

§ 277.33 Witnesses.

(a) Except as provided in paragraph (b) of this section, testimony at the hearing shall be given orally by witnesses under oath or affirmation.

(b) At the discretion of the presiding officer, testimony may be admitted in the form of a written statement or deposition. Any such written statement must be provided to all other parties along with the last known address of such witness, in a manner which allows sufficient time for other parites to subpoena such witness for deposition or cross-examination at the hearing. Prior written statements of witnesses proposed to testify at the hearing and deposition transcripts shall be exchanged as provided in § 277.22(a).

(c) The presiding officer shall exercise reasonable control over the mode and order of interrogating witnesses and presenting evidence so as to—

(1) Make the interrogation and presentation effective for the ascertainment of the truth.

(2) Avoid needless consumption of time, and

(3) Protect witnesses from harassment or undue embarrassment.

(d) The presiding officer shall permit the parties to conduct such cross-examination as may be required for a full and true disclosure of the facts.

(e) At the discretion of the presiding officer, a witness may be cross-examined on matters relevant to the proceeding without regard to the scope of his or her direct examination.

(f) Upon motion of any party, the presiding officer shall order witnesses excluded so that they cannot hear the testimony of other witnesses. This rule does not authorize exclusion of—

(1) A party who is an individual;

(2) In the case of a party that is not an individual, an officer or employee of the party designated by the party's representative; or

(3) An individual whose presence is shown by a party to be essential to the presentation of its case, including an individual employed by the Government engaged in assisting the representative for the Government.

§ 277.34 Evidence.

(a) The presiding officer shall determine the admissibility of evidence.

(b) Except as provided herein, the presiding officer shall not be bound by the Federal Rules of Evidence. However, the presiding officer may apply the Federal Rules of Evidence where appropriate, e.g., to exclude unreliable evidence.

(c) The presiding officer shall exclude irrelevant and immaterial evidence.

(d) Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or by considerations of undue delay or needless presentation of cumulative evidence.

(e) Although relevant, evidence may be excluded if it is privileged under Federal law.

(f) Evidence concerning offers of compromise or settlement shall be inadmissible to the extent provided in Rule 408 of the Federal Rules of Evidence.

(g) The presiding officer shall permit the parties to introduce rebuttal witnesses and evidence.

(h) All documents and other evidence offered or taken for the record shall be open to examination by all parties, unless otherwise ordered by the presiding officer pursuant to § 277.24.

§ 277.35 The record.

(a) The hearing will be recorded and transcribed. Transcipts may be obtained following the hearing from the presiding officer at a cost not to exceed the actual cost of duplication.

(b) The transcript of testimony, exhibits and other evidence admitted at the hearing, and all papers and requests filed in the proceeding constitute the record for the decision by the presiding officer and the authority head.

(c) The record may be inspected and copied (upon payment of a reasonable fee) by anyone, unless otherwise ordered by the presiding officer.

§ 277.36 Post hearing briefs.

The presiding officer may require the parties to file post-hearing briefs. In any event, any party may file a post-hearing brief. The presiding officer shall fix the time for filing such briefs, not to exceed 60 days from the date the parties receive the transcript of the hearing or, if applicable, the stipulated record. Such briefs may be accompanied by proposed findings of fact and conclusions of law. The presiding officer may permit the parties to file reply briefs.

§ 277.37 Initial decision.

(a) The presiding officer shall issue an initial decision based only on the record, which shall contain findings of fact, conclusions of law, and the amount of any penalties and assessments imposed.

(b) The findings of fact shall include a finding on each of the following issues:

(1) Whether the claims or statements identified in the complaint, or any portions thereof, violate § 277.3 and

(2) If the person is liable for penalties or assessments, the appropriate amount of any such penalties or assessments considering any mitigating or aggravating factors that he or she finds in the case.

(c) The presiding officer shall promptly serve the initial decision on all parties within 90 days after the time for submission of post-hearing briefs and reply briefs (if permitted) has expired. The presiding officer shall at the same time serve all defendants with a statement describing the right of any defendant determined to be liable for a civil penalty or assessment to file a motion for reconsideration with the presiding officer or a notice of appeal with the authority head. If the presiding officer fails to meet the deadline contained in this paragraph, he or she shall notify the parties of the reason for the delay and shall set a new deadline.

(d) Unless the initial decision of the presiding officer is timely appealed to the authority head, or a motion for reconsideration of the initial decision is timely filed, the initial decision shall constitute the final decision of the authority head and shall be final and binding on the parties 30 days after it is issued by the presiding officer.

§ 277.38 Reconsideration of initial decision.

(a) Except as provided in paragraph (d) of this section, any party may file a motion for reconsideration of the initial decision within 20 days of receipt of the initial decision. If service was made by mail, receipt will be presumed to be five days from the date of mailing in the absence of contrary proof.

(b) Every such motion must set forth the matters claimed to have been erroneously decided and the nature of the alleged errors. Such motion shall be accompanied by a supporting brief.

(c) Responses to such motions shall be allowed only upon request of the presiding officer.

(d) No party may file a motion for reconsideration of an initial decision that has been revised in response to a previous motion for reconsideration.

(e) The presiding officer may dispose of a motion for reconsideration by denying it or by issuing a revised initial decision.

(f) When a motion for reconsideration is made, the time periods for appeal to the authority head contained in § 277.38, and for finality of the initial decision in § 277.36(d), shall begin on the date the presiding officer issues the denial of the motion for reconsideration or a revised initial decision, as appropriate.

§ 277.39 Appeal to authority head.

(a) Any defendant who has filed a timely answer and who is determined in an initial decision to be laible for a civil penalty or assessment may appeal such decision to the authority head by filing a notice of appeal with the authority head in accordance with this section.

(b) (1) No notice of appeal may be filed until the time period for filing a motion for reconsideration under § 277.38 has expired.

(2) If a motion for reconsideration is timely filed, a notice of appeal must be filed within 30 days after the presiding officer denies the motion or issues a revised initial decision, whichever applies.

(3) If no motion for reconsideration is timely filed, a notice of appeal must be filed within 30 days after the presiding officer issues the initial decision.

(4) The authority head may extend the initial 30–day period for an additional 30 days if the defendant files with the authority head a request for an extension within the initial 30–day period and shows good cause.

(c) If the defendant files a timely notice of appeal with the authority head, the presiding officer shall forward the record of the proceeding to the authority head.

(d) A notice of appeal shall be accompanied by a written brief specifying exceptions to the initial decision and reasons supporting the exceptions.

(e) The representative for the Government may file a brief in opposition to the exceptions within 30 days of receiving the notice of appeal and accompanying brief.

(f) There is no right to appear personally before the authority head, although the authority head may at his discretion require the parties to appear for an oral hearing on appeal.

(g) There is no right to appeal any interlocutory ruling by the presiding officer.

(h) In reviewing the initial decision, the authority head shall not consider any objection that was not raised before the presiding officer unless a demonstration is made of extraordinary circumstances causing the failure to raise the objection.

(i) If any party demonstrates to the satisfaction of the authority head that additional evidence not presented at such hearing is material and that there was reasonable grounds for the failure to present such evidence at such hearing, the authority head shall remand the matter to the presiding officer for consideration of such additional evidence.

(j) The authority head may affirm, reduce, reverse, compromise, remand, or settle any penalty or assessment, determined by the presiding offices in any initial decision.

(k) The authority head shall promptly serve each party to the appeal with a copy of the decision of the authority head. At the same time the authority head shall serve notice of the right to seek judicial review.

(l) Unless a petition for review is filed as provided in 32 U.S.C. 3805 after a defendant has exhausted all administrative remedies under this part and within 60 days after the date on which the authority head serves the defendant with a copy of the authority head's decision, a determination that a defendant is liable under § 277.3 is final and is not subject to judicial review.

(m) The Authority Heads (or their delegees) may designate an officer or employee of the authority, who is serving in the grade of GS–17 or above under the General Schedule, or in the Senior Executive Service to carry out these appellate responsibilities, except that the authority to compromise, settle or otherwise discretionarily dispose of the case on appeal provided pursuant to § 277.39(j) hereof may not be so redelegated pursuant to this paragraph.

§ 277.40 Stays ordered by the Department of Justice.

If at any time the Attorney General or an Assistant Attorney General designated by the Attorney General transmits to the authority head a written finding that continuation of the adminstrative process described in this part with respect to a claim or statement may adversely affect any pending or potential criminal or civil action related to such claim or statement, the authority head shall stay the process immediately. The authority head may order the process resumed only upon receipt of the written authorization of the Attorney General.

§ 277.41 Stay pending appeal.

(a) An initial decision is stayed automatically pending disposition of a motion for reconsideration or of an appeal to the authority head.

(b) No administrative stay is available following a final decision of the authority head.

§ 277.42 Judicial review.

Section 3805 of Title 31, United States Code, authorizes judicial review by an appropriate United States District Court of a final decision of the authority head imposing penalties or assessment under this part and specifies the procedures for such review.

§ 277.43 Collection of civil penalties and assessments.

Sections 3806 and 3808(b) of Title 31, United States Code, authorize actions for collection of civil penalties and assessments imposed under this part and specify the procedures for such actions.

§ 277.44 Right to administrative offset.

The amount of any penalty or assessment which has become final, or for which a judgment has been entered under § 277.42 or 277.43, or any amount agreed upon in a compromise or settlement under § 277.46 may be collected by administrative offset under 31 U.S.C. 3716, except that an administrative offset may not be made under this paragraph against a refund of an overpayment of Federal taxes, then or later owing by the United States to the defendant.

§ 277.45 Deposit in Treasury of United States.

All amounts collected pursuant to this part shall be deposited as miscellaneous receipts in the Treasury of the United States, except as provided in 31 U.S.C. 3806(g).

277.46 Compromise or settlement.

(a) Parties may make offers of compromise or settlement at any time.

(b) The reviewing official has the exclusive authority to compromise or settle a case under this part at any time after the date on which the reviewing official is permitted to issue a complaint and before the date on which the presiding officer issues an initial decision.

(c) The authority head has exclusive authority to compromise or settle a case under this part at any time after the date on which the presiding officer issues an initial decision, except during the pendency of any review under § 277.42 or during the pendency of any action to collect penalites and assessments under § 277.43.

(d) The Attorney General has exclusive authority to compromise or settle a case under this part during the pendency of any review under § 277.42 of any action to recover penalties and assessments under 31 U.S.C. 3806.

(e) The investigating official may recommend settlement terms to the reviewing official, or the Attorney General as appropriate. The reviewing official may recommend settlement terms to the Attorney General, as appropriate.

(f) Any compromise or settlement must be in writing.

§ 277.47 Limitations.

(a) The notice of hearing with respect to a claim or settlement must be served in the manner specified in Section 8 within six years after the date on which such claim or statement is made.

(b) If the defendant fails to file a timely answer, service of a notice under § 277.10(b) shall be deemed a notice of hearing for purposes of this section.

(c) The statute of limitations may be extended by agreement of the parties.

(d) If at any time during the course of proceedings brought pursuant to this section the authority head receives or discovers any specific information concerning bribery, gratuities, conflict of interest or other corruption or similar activity in relation to a false claim or statement the authority head shall immediately report such information to the Attorney General and to the Inspector General, Department of Defense.

§ 277.48 Delegations.

The General Counsel for the Department of Defense is designated to carry out the responsibilities of the authority head of the Department of Defense for the issuance of additional implementing regulations which are necessary to implement PFCRA and this part to decide cases upon appeal, and to hire or designate employees of the Department of Defense to decide cases on appeal. The General Counsel is also designated to appoint presiding officers for the Department of Defense, and may assist in the appointment of presiding officers on detail from other agencies by the authority heads of the Military Departments.

Linda M. Lawson,
Alternate OSD Federal Register Liaison Officer, Department of Defense.
July 10, 1987.

[FR Doc. 87-16107 Filed 7-15-87; 8:45 am]
BILLING CODE 3810-01-M

DEPARTMENT OF TRANSPORTATION

Coast Guard

33 CFR Part 165

[CGD5 87-038]

Security Zone; James River, VA

AGENCY: Coast Guard, DOT.

ACTION: Notice of proposed rule making.

SUMMARY: The Coast Guard is proposing to amend the special regulations regarding the entry of shellfishermen into the security zone in the vicinity of Newport News Shipbuilding and Dry Dock Company along the James River. This action is being taken to clarify and simplify the procedures for shellfishing vessels to enter the security zone by eliminating the need for the Captain of the Port to set periods and conditions for entry. The proposal would continue to permit shellfish harvesting vessels to enter the zone at anytime, provided their owners have registered their vessels with the Captain of the Port. These proposed changes are consistent with the intent and spirit of the original rule.

DATES: Comments must be received on or before August 31, 1987.

ADDRESSES: Comments should be mailed to Commander (mpv), Fifth Coast Guard District, Federal Building, 431 Crawford Street, Portsmouth, Virginia, 23704-5004. The comments and other materials referenced in this notice will be available for inspection and copying at 431 Crawford Street, Room 408, in the offices of the Port and Vessel Safety Branch. Normal office hours are between 8:00 a.m. and 4:30 p.m., Monday through Friday, except holidays. Comments may also be hand-delivered to this address.

FOR FURTHER INFORMATION CONTACT: Lieutenant W. J. Wetzel, (804) 398-6388.

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in this rulemaking by submitting written views, data or arguments. Persons submitting comments should include their name and addresses, identify this notice (CGD5 87-038) and the specific section of the proposal to which their comments apply, and give reasons for each comment.

The regulations may be changed in light of comments received. All comments received before the expiration of the comment period will be considered before final action is taken on this proposal. No public hearing is planned, but one may be held if written requests for a hearing are received and it is determined that the opportunity to make oral presentations will aid the rulemaking process.

Drafting Information

The drafters of this notice are Lieutenant W.J. Wetzel, Project Officer, Port and Vessel Safety Branch, Fifth Coast Guard District, and Commander R. J. Reining, Project Attorney, Legal Office, Fifth Coast Guard District.

Discussion of Proposed Regulations

The Coast Guard has identified two specific difficulties with the present wording of § 165.504(c)(1)(vii) which can be corrected through the public rulemaking process. The changes which the Coast Guard proposes in order to correct these problems are in keeping with the intent and spirit of the original rulemaking, and do not create any new restrictions upon the entry of shellfishing vessels into the zone.

The present regulation states that "commercial shellfish harvesting vessels properly licensed by the Virginia Marine Resources Commission to harvest clams" are permitted into the security zone "during periods and under conditions specified by the Captain of the Port." On the basis of its own review, the Coast Guard has determined that the Federal government may not restrict entry into the zone on the basis of Virginia state licensing requirements, since such a provision unintentionally discriminates against non-residents of Virginia.

The Coast Guard recognizes the Commonwealth of Virginia's authority to regulate shellfishing within its waters, and will continue to cooperate with the Virginia Marine Resources Commission by providing it with the names of vessels, which are permitted to enter the security zone under the provisions of this amended regulation. Any enforcement action against violators of state law or regulation, however, are the responsibility of the Commonwealth of Virginia.

Additionally, the Coast Guard has determined that the provisions of the current regulation may require additional periodic rulemaking by the Captain of the Port in order to establish periods and conditions for vessel entry.

Such a requirement was not intended by the original regulation, and, if followed, imposes an unreasonable and unnecessary administrative burden on the Captain of the Port.

The proposal will continue to allow the Captain of the Port, in the interest of national security, to issue specific orders to vessels regulating the operation of those vessels within the security zone. This proposal does not limit the authority of the Captain of the Port to issue other regulations, such as safety zones for ship launchings, that could affect the operation of the vessels within the security zone.

This regulation is issued pursuant to 50 U.S.C. 191 as set out in the authority citation for all of Part 165.

Economic Assessment and Certification

These proposed regulations are considered to be non-major under Executive Order 12291 on Federal Regulation and nonsignificant under Department of Transportation regulatory policies and procedures (44 FR 11034; February 26, 1979). The economic impact of this proposal is expected to be so minimal that a full regulatory evaluation is unnecessary. If there is to be any adverse affect caused by these changes, it has not been identified. In all likelihood, the proposed regulations will, if anything, reduce any economic burden to the public.

Since the impact of this proposal is expected to be minimal, the Coast Guard certifies that, if adopted, it will not have a significant economic impact on a substantial number of small entities.

List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Security measures, Vessels, Waterways.

Proposed Regulations

In consideration of the foregoing, the Coast Guard proposes to amend Part 165 of Title 33, Code of Federal Regulations as follows:

PART 165—[AMENDED]

1. The authority citation for Part 165 continues to read as follows:

Authority: 33 U.S.C. 1225 and 1231; 50 U.S.C. 191; 49 CFR 1.46 and 33 CFR 1.05–1(g), 6.04–1, 6.04–6, and 160.5.

2. In § 165.504, paragraph (c)(1)(vii) is revised to read as follows:

§ 165.504 Newport News Shipbuilding and Dry Dock Company Shipyard, James River, Newport News, Va.

* * * * *

(c) * * *

(1) * * *

(vii) Commercial shellfish harvesting vessels taking clams from the shellfish beds within the zone, if—

(A) The owner of the vessel has previously provided the Captain of the Port, Hampton Roads, Virginia, information about the vessel, including:

(1) The name of the vessel;

(2) The vessel's official number, if documented, or state number, if numbered by a State issuing authority;

(3) A brief description of the vessel, including length, color, and type of vessel;

(4) The name, Social Security number, current address, and telephone number of the vessel's master, operator, or person in charge; and

(5) Upon request, information on the vessel's crew.

(B) The vessel is operated in compliance with any specific orders issued to the vessel by the Captain of the Port or other regulations controlling the operation of vessels within the security zone that may be in effect.

* * * * *

Dated: July 2, 1987.

A.D. Breed,

Rear Admiral, U.S. Coast Guard, Commander, Fifth Coast Guard District.

[FR Doc. 87-16168 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-14-M

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 22

[CC Docket No. 87-120]

Flexible Allocation of Frequencies in the Domestic Public Land Mobile Service

AGENCY: Federal Communications Commission.

ACTION: Proposed rule; Extension of time for comments.

SUMMARY: This order grants an extension of time for comments and reply comments to the Notice of Proposed Rulemaking in CC Docket No. 87-120, "In the matter of flexible allocation of frequencies in the Domestic Public Land Mobile Service for paging and other services." 52 FR 19741 (May 27, 1987).

DATES: Applicants must file comments by July 23, 1987, and reply comments by August 20, 1987.

ADDRESS: Federal Communications Commission, Washington DC 20554.

FOR FURTHER INFORMATION CONTACT: Susan Magnotti (202) 632-6450.

SUPPLEMENTARY INFORMATION: This is a summary of the Common Carrier Bureau's Memorandum Opinion and Order, pursuant to delegated authority; adopted June 29, 1987, and released June 30, 1987.

The full text of Commission decisions are available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230) 1919 M Street NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Service, (202) 857-3800, 2100 M Street NW., Washington, DC 20037.

Memorandum Opinion and Order

Adopted June 29, 1987;

Released June 30, 1987.

By the Chief, Common Carrier Bureau.

1. On June 23, 1987, the Paging Division of Telocator Network of America ("Telocator") filed a "Request for Extension of Time" in the captioned proceeding. Telocator requests that the filing deadline for Comments be extended from July 2, 1987 to July 23, 1987, and that the period for filing Reply Comments be extended from July 30 to August 20, 1987. In support of its request, Telocator argues that this proceeding involves "extraordinarily complex engineering issues associated with fundamental allocations matters" and that the "outcome of this proceeding will have a major effect on the radio common carrier industry." Telocator requests additional time to complete its engineering analysis and further coordination within Telocator. It argues that a more complete record will result from an extension.

2. We will grant Telocator's request, for good cause shown. Comments in this proceeding will be due July 23, 1987, and reply comments are due August 20, 1987. A copy of this order will appear in the **Federal Register.**

Federal Communications Commission.

Gerald Brock,

Chief, Common Carrier Bureau.

[FR Doc. 87-15924 Filed 7-15-87; 8:45 am]

BILLING CODE 6712-01-M

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47 CFR Part 43

[CC Docket No. 87-134; FCC 87-165]

Communications Common Carriers; Reporting and Recordkeeping Requirements

AGENCY: Federal Communications Commission.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Federal Communications Commission proposes to amend §§ 43.42 and 43.43 of its Rules so as to reduce the number of communications common carriers who must file the reports to the Commission specified in those sections.

DATES: Comments must be filed with the Commission by August 20, 1987, and reply comments must be filed by September 4, 1987.

ADDRESS: Federal Communications Commission, Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Herbert H. Wilson, Jr., Accounting and Audits Division, Common Carrier Bureau, Federal Communications Commission, Washington, DC 20554, (202) 634–1861.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's *Notice of Proposed Rulemaking* (CC Docket No. 87–134), FCC 87–165, released June 30, 1987. The full text of the Commission decision is available for inspection and copying during normal business hours in the FCC Dockets Branch (Room 230), 1919 M Street NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractors, International Transcription Service, (202) 857–3800, 2100 M Street NW., Suite 140, Washington, DC 20037.

The collection of information requirement contained in this proposed rule has been submitted to OMB for review under section 3504(h) of the Paperwork Reduction Act. Persons wishing to comment on this collection of information requirement should direct their comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, Attention: Desk Officer for Federal Communications Commission.

Summary of Notice of Proposed Rulemaking

Section 43.42 of the Commission's Rules now requires that all communications common carriers which have operating revenues for the proceeding year in excess of $1,000,000 to file specified reports on their employee pension and benefit plans. The Commission proposes to amend § 43.42(a) to require the filing of these reports only of carriers which the Commission determines to be "dominant" carriers and which have operating revenues for the proceeding year in excess of $100,000,000.

Section 43.43 now requires all carriers which have operating revenues for the preceeding year in excess of $1,000,000 to file reports as specified in that section before making any changes in the depreciation rates applicable to their operated plants. Carriers for which the Commission has previously prescribed depreciation rates may not make changes in such rates unless the changes are also prescribed by the Commission. The Commission proposes to amend § 43.43(a) so as to apply these requirements only to carriers which the Commission determines to be "dominant" carriers and which have operating revenues for the previous year in excess of $100,000,000.

The proposed rule changes only address the designation of which carriers must file the reports specified in §§ 43.42 and 43.43. No changes are proposed in the contents of the reports themselves.

Ordering Clauses

Accordingly, *It Is Ordered*, pursuant to sections (4i), 4(j), 220(b) 222(b), and 403, of the Communications Act of 1934, as amended, 47 U.S.C. 4(i), 4(j), 220(b), 222(b), and 403 and section 553 of the Administrative Procedure Act, 5 U.S.C. 553, notice is hereby given of proposed amendments to Part 43 of the Commission's Rules, 47 CFR Part 43, in accordance with the proposals, discussion, and statements in this *Notice of Proposed Rulemaking*.

It Is Further Ordered, that the request of Western Union for waiver of § 43.43 of this Commission's Rules and Regulations *Is Granted*, pending the outcome of this proceeding.

It is further ordered, that interested persons may file comments on the specific proposals discussed in this *Notice* on or before August 20 1987. Reply comments shall be filed on or before September 4, 1987. In accordance with the provisions of § 1.419 of the Commission's Rules, 47 CFR 1.419, an original and five (5) copies of all comments shall be furnished to the Commission. Copies of the comments will be available for public inspection in the Commission's Docket Reference Room, 1919 M Street, NW., Washington, DC.

List of Subjects in 47 CFR Part 43

Communications common carriers, Reporting and recordkeeping requirements.

Federal Communications Commision.
William J. Tricarico,
Secretary.

Part 43 of the Commission's Rules Regulations, 47 CFR Part 43, is proposed to be amended as follows:

PART 43—[AMENDED]

1. The authority citation for 47 CFR Part 43 continues to read as follows:

Authority: Secs. 4, 48 Stat. 1066 as amended, 47 U.S.C. 154, unless otherwise noted. Interpret or apply secs. 211, 219, 48 Stat. 1073, 1077, as amended, 47 U.S.C. 211, 219, 220.

2. The introductory text of § 43.42(a) is revised to read as follows:

§ 43.42 Reports on pensions and benefits.

(a) Each communication common carrier which had operating revenues for the proceeding year of $100,000,000 or more and which has been found by this Commission to be a dominant carrier with respect to any communications service shall, within thirty (30) days after the adoption of a plan (or within thirty (30) days of first becoming subject to this section if such carrier has adopted a plan), furnish the Commission with the following information (see, however, § 43.01):

* * * * *

3. Section 43.43(a) is revised to read as follows:

§ 43.42 Reports of proposed changes in depreciation rates.

(a) Each communication common carrier which had operating revenues for the preceding year of $100,000,000 or more and which has been found by this Commission to be a dominant carrier with respect to any communications service shall, before making any change in the depreciation rates applicable to its operated plant, file with the Commission a report furnishing the data described in the subsequent paragraphs of this section, and also comply with the other requirements thereof.

* * * * *

[FR Doc. 87–16018 Filed 7–15–87; 8:45 am]
BILLING CODE 6712-01-M

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

48 CFR Parts 1805, 1815, and 1870

Changes to NASA FAR Supplement Concerning "NASA Research Announcement"

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice invites written comments on a NASA proposal to amend the NASA Federal Acquisition Regulation Supplement (FAR), Chapter 18 of the Federal Acquisition Regulations System in Title 48 of the Code of Federal Regulations. These changes constitute NASA's implementation of the Broad Agency Announcement, as authorized at FAR 6.102 (48 CFR 6.102).

DATE: Comments are due not later than August 31, 1987.

ADDRESS: Requests for copies of the proposal and comments should be addressed to NASA Headquarters, Office of Procurement, Procurement Policy Division (Code HP), Washington, DC 20546.

FOR FURTHER INFORMATION CONTACT: W.A. Greene, Procurement Policy Division (Code HP), Office of Procurement, NASA Headquarters, Washington, DC 20546, Telephone: 202–453–2119.

SUPPLEMENTARY INFORMATION:

Background

The Competition in Contracting Act (CICA) provides a new mechanism, the "Broad Agency Announcement" for obtaining research proposals. A proposed rule was published on May 6, 1987 (52 FR 17280), which would add to the Federal Acquisition Regulation procedures for the use of the broad agency announcement at FAR 35.016 (48 CFR 35.016). NASA proposes the issuance of a type of broad agency announcement for soliciting research proposals, the "NASA Research Announcement (NRA)," pursuant to and upon issuance of the final FAR rule. The NASA rule covers policies and procedures for preparing and issuing NRAs, proposal preparation instructions, competition coding, solicitation numbering and provisions, late proposals, evaluation and selection for award, and relationship to unsolicited proposals.

Impact

The Director, Office of Management and Budget (OMB), by memorandum dated December 14, 1984, exempted certain agency procurement regulations from Executive Order 12291. The proposed regulations fall in this category. NASA certifies that these regulations will not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) Information collection approval number 2700–0042 has been assigned by OMB to the NASA solicitation process.

List of Subjects in 48 CFR Parts 1805, 1815, and 1870

Government procurement.

L.E. Hopkins,

Deputy Assistant Administrator for Procurement.

[FR Doc. 87–16069 Filed 7–15–87; 8:45 am]

BILLING CODE 7510-01-M

Notices

Federal Register
Vol. 52, No. 136
Thursday, July 16, 1987

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Commodity Credit Corporation

Proposed Determinations With Regard to the 1988 Feed Grain Program

AGENCY: Commodity Credit Corporation, USDA.

ACTION: Proposed determinations.

SUMMARY: The Secretary of Agriculture proposes to make the following determinations with respect to the 1988 crop of feed grains: (a) The loan and purchase level; (b) whether a marketing loan program should be implemented; (c) the established "target" price; (d) the percentage reduction under an acreage limitation program (ARP); (e) whether an optional paid land diversion (PLD) program should be established and, if so, the percentage of diversion under the program; (f) if a marketing loan program is implemented, whether the inventory reduction program also should be implemented; (g) whether a portion or all of the deficiency or diversion payments should be made in the form of commodity certificates; (h) whether barley should be determined eligible for payment purposes; (i) whether malting barley should be exempt from an ARP; (j) provisions of the farmer-owned reserve (FOR) program; (k) whether a feed grain export certificate program should be implemented; (1) whether loans and purchases should be available to producers who cut, purchase or exchange their corn for silage; (m) cost reduction options; and (n) other related determinations. These determinations are to be made in accordance with the Agricultural Act of 1949, as amended (the "1949 Act"), and the Commodity Credit Corporation ("CCC") Charter Act, as amended.

DATE: Comments must be received on or before August 31, 1987, in order to be assured of consideration.

ADDRESS: Dr. Howard C. Williams, Director, Commodity Analysis Division, USDA-ASCS, Room 3741, South Building, P.O. Box 2415, Washington, DC 20013.

FOR FURTHER INFORMATION CONTACT: Phil Sronce, Agricultural Economist, Commodity Analysis Division, USDA-ASCS, P.O. Box 2415, Washington, DC 20013 or call (202) 447-7924. The Preliminary Regulatory Impact Analysis describing the options considered in developing this proposed determination and the impact of implementing each option is available on request from the above-named individual.

SUPPLEMENTARY INFORMATION: This notice has been reviewed under Department of Agriculture USDA procedures established in accordance with Executive Order 12291 and Departmental Regulation No. 1512-1 and has been designated as "major". It has been determined that these program provisions will result in an annual effect on the economy of $100 million or more.

The title and number of the Federal assistance programs to which this notice applies are: Title—Feed Grain Production Stabilization: Number 10.058 and Title—Commodity Loans and Purchases: Number 10.055, as found in the catalog of Federal Domestic Assistance.

It has been determined that the Regulatory Flexibility Act is not applicable to this notice since CCC is not required by U.S.C. 553 or any other provision of the law to publish a notice of proposed rulemaking with respect to the subject of this notice.

This program is not subject to the provisions of Executive Order 12372 which requires intergovernmental consultation with State and local officials. See the Notice related to 7 CFR Part 3015, Subpart V, published at 48 FR 29115 (June 24, 1983).

On April 28, 1987 (52 FR 81) a notice of proposed determinations was published which set forth provisions common to the 1988 wheat, feed grain, upland cotton, ELS cotton, and rice price support and production adjustment programs.

The comments received with respect to such notice and this notice of proposed determination which is applicable only to the 1988 crop of feed grains will be reviewed in determining the provisions of the 1988 Feed Grain Program. Comments must be received by August 31, 1987, in order to be assured of consideration.

Accordingly, the following proposed program determinations with respect to the 1988-crop of feed grains are to be made by the Secretary:

Proposed Determinations

a. Loan and Purchase

Sections 105C(a)(1), (2), and (3) of the 1949 Act provide that the Secretary shall make available to producers loans and purchases for the 1988-crop of corn at such level as the Secretary determines will maintain the competitive relationship of corn to other grains in domestic and export markets after taking into consideration the cost of producing corn, supply and demand conditions, and world prices for corn.

The basic loan and purchase level which is determined shall not be less than 75 percent, nor more than 85 percent, of the simple average price received by producers of corn, as determined by the Secretary, during the marketing years for the immediately preceding 5 crops of corn, excluding the year in which the average price was the highest and the year in which the average price was the lowest in such period, except that the loan and purchase level for a crop may not be reduced by more than 5 percent from the level determined for the preceding crop.

Also, if the Secretary determines that the average price received by producers for corn in the previous marketing year was not more than 110 percent of the loan and purchase level for corn for such marketing year or determines that such action in necessary to maintain a competitive market position for feed grains, the Secretary may reduce the 1988-crop loan and purchase level for corn by the amount the Secretary determines necessary to maintain domestic and export markets for feed grains. The basic loan and purchase level may not be reduced under this authority by more than 20 percent. Any reduction under this authority in the loan and purchase level for corn shall not be considered in determining the loan and purchase level for corn for subsequent years.

The 1988-crop basic loan and purchase level for corn will be determined based upon the simple average marketing year prices received by producers during the 1983 through 1987 crops of corn. These prices are:

Crop year	Average price/ bushel
1983	3.21
1984	2.63
1985	2.23
1986 (Estimated)	1.50
1987 (Projected)	1.65

Crop year prices 1983 and 1986 would not be considered in making this determination since they are the highest and lowest prices during the 5-year base period. The average of the remaining prices would be $2.17 per bushel with 75–85 percent of such amount equal to $1.63–$1.85 per bushel. Since these levels are below 95 percent of the 1987 basic loan and purchase level of $2.28 per bushel, the 1988 basic loan and purchase level for corn may not be less than $2.17 per bushel.

It is it determined necessary to maintain domestic and export markets for feed grains, the Secretary proposes to reduce the basic 1988-crop loan and purchase level for corn to the level deemed necessary. This adjusted level can be no lower than $1.74 per bushel ($2.17 per bushel times 0.8).

Section 105(C)(6) of the 1949 Act provides that the Secretary shall make available to producers loans and purchases for the 1988 crop of grain sorghums, barley, oats and rye at such levels as the Secretary determines are fair and reasonable in relation to the level that loans and purchases are made available for corn, taking into consideration the: (1) Supply of the commodity, in relation to demand of the commodity; (2) feeding value of such commodity in relation to corn; (3) availability of funds; (4) perishability of the commodity; (5) importance of the commodity to agriculture and the national economy; (6) ability to dispose of stocks acquired through price support operation; (7) need for offsetting temporary losses of export markets; and (8) ability and willingness of producers to keep supplies in line with demand.

Comments on the level of loans and purchases for the 1988 crop of feed grains are requested.

b. Marketing Loans and Loan Deficiency Payments

Section 105C(a)(4) of the 1949 Act provides that the Secretary may permit a producer to repay a loan for a crop at a level that is the lesser of: (1) The announced loan level or (2) the higher of: (i) 70 percent of the basic loan level or (ii) the prevailing world market price for the crop, as determined by the Secretary.

If the Secretary permits a producer to repay a loan as described above, the Secretary shall prescribe by regulation (1) a formula to define the prevailing world market price for feed grains and (2) a mechanism by which the Secretary shall announce periodically the prevailing world market price for feed grains.

Additionally, section 105C(b) of the 1949 Act provides that the Secretary may, for the 1988 crop of corn, grain sorghums, barley, oats, and rye, make payments available to producers who, although eligible to obtain a loan or purchase agreement, agree to forgo obtaining such loan or agreement in return for such payments. The payment shall be computed by multiplying: (1) The loan payment rate by (2) the quantity of such feed grains the producer is eligible to place under loan.

For the purpose of this section, the quantity of feed grains eligible to be pledged as collateral for a CCC price support loan may not exceed the product obtained by multiplying (1) the individual farm program acreage for the crop by (2) the farm program payment yield established for the farm. The loan payment rate shall be the amount by which the announced loan level exceeds the level at which a loan may be repaid.

Comments on whether the Secretary should implement marketing loans and "loan deficiency" payments for the 1988 crop of feed grains and the formula and methodology for determining the prevailing world market price to be used if marketing loans are implemented are requested.

c. Established "Target" Price

Section 105C(c)(1)(A) of the 1949 Act provides that the Secretary shall make available to producers payments for the 1988 crop of corn, grain sorghums, oats, and, if designated by the Secretary, barley, if an amount computed by multiplying (1) the payment rate by (2) the individual farm program acreage by (3) the farm program payment yield.

Section 105C(c)(1)(C)(i) of the 1949 Act provides that the payment rate for the 1988 crop of corn shall be the amount by which the established "target" price for the crop exceeds the higher of (1) the national weighted average market price received by producers during the first five months of the marketing year for such crop and (2) the basic loan level for such crop. Section 105C(c)(1)(D) provides that if the level of basic loan is adjusted, the Secretary shall provide emergency compensation by increasing the established price "deficiency" payments by an amount determined necessary to provide the same total return to producers as if the adjustment in the basic loan level had not been made. In determining the "deficiency" payment rate, the Secretary shall use the national weighted average market price of corn received by producers during the marketing year for such crop. Section 105C(c)(1)(E) provides that the established "target" price for the 1988 crop of corn shall not be less than $2.97 per bushel.

Section 105C(c)(1)(C) of the 1949 Act provides that, at the option of the Secretary, with respect to the 1988 crop of corn, if the national weighted average market price received by producers during the first 5 months of the marketing year exceeds $2.24 bushel, the "deficiency" payment rate shall be determined based on the difference between the established "taget" price (i.e., $2.97 per bushel) and $2.24 which is $0.73 per bushel.

In accordance with section 105C(c)(1)(D), notwithstanding the provisions of sections 105C(c)(1)(A) through (C), if the Secretary exercises the discretionary authority to adjust the loan and purchase level the Secretary shall increase the established price payments in such amount as the Secretary determines necessary to provide the same total return to producers as if such adjustment had not been made. This second payment rate level will be determined based on the difference between (1) the weighted national average market price of corn received by producers during the 1988–1989 marketing year (September 1988–August 1989) and (2) the adjusted loan level, but not less than $1.74 per bushel. The maximum payment rate would be $0.43 per bushel. Payments that are based upon this payment rate would not be subject to the $50,000 payment limitation but would be subject to the overall $250,000 payment limitation.

Section 105C(c)(1)(F) provides that the payment rate for grain sorghums, oats, and, if designated by the Secretary, barley, shall be such rate as the Secretary determines fair and reasonable in relation to the rate at which payments are made available to corn.

Comments are requested whether the Secretary should make the 1988 feed grain crop deficiency payments in accordance with section 105C(c)(1)(C) of the 1949 Act.

d. Acreage Limitation Program (ARP)

Section 105C(f) provides with respect to the 1988 crop of feed grains, if the Secretary estimates, not later than September 30, 1987, that the quantity of corn on hand in the United States on the first day of the marketing year (September 1, 1988) for such crop (not including any quantity of corn of such crop) will be more than 2,000,000,000 bushels, the Secretary shall provide for an ARP under which the acreage planted to feed grains for harvest on a farm would be limited to the feed grain crop acreage base for the farm for the crop reduced by not less than 12.5 percent but not more than 20 percent.

If the quantity is estimated to be 2,000,000,000 bushels or less, the Secretary may provide for an ARP under which the acreage planted to feed grains for harvest on a farm would be limited to the feed grain crop acreage base for the farm for the crop reduced by not more than 12.5 percent.

If a feed grain ARP is announced, such limitation shall be achieved by applying a uniform percentage reduction to the feed grain crop acreage base for the crop for each feed grains-producing farm. Producers who knowingly produce feed grains in excess of the permitted feed grain acreage for the farm shall be ineligible for loans, purchases, and payments with respect to feed grains produced on that farm. An acreage on the farm shall be devoted to conservation uses determined by dividing (1) the product obtained by multiplying the number of acres required to be withdrawn from the production of feed grains times the number of acres planted to such commodity by (2) the number of acreas authorized to be planted to such commodity under the limitation established by the Secretary. This acreage is referred to as "reduced acreage".

The quantity of corn on hand on September 1, 1988, is currently estimated to exceed 2.0 billion bushels and may exceed 5.0 billion bushels. Accordingly, the Secretary would be required to implement an ARP of 12.5–20.0 percent.

Comments are requested as to the percentage level, if any, at which an ARP should be implemented for the 1988 crop of feed grains.

e. Paid Land Diversion (PLD) Program

Section 105C(f)(5)(A) of the 1949 Act provides that the Secretary may make land diversion payments to producers of feed grains, whether or not an ARP or set-aside program is in effect, if the Secretary determines that such land diversion payments are necessary to assist in adjusting the total national acreage of feed grains to desirable goals. Such land diversion payments shall be made to producers who, to the extent prescribed by the Secretary, devote to approved conservation uses an acreage of cropland on the farm in accordance with land diversion contracts entered into by the Secretary with such producers.

The amounts payable to producers under land diversion contracts may be determined through the submission of bids for such contracts by producers in such manner as the Secretary may prescribe or through such other means as the Secretary determines appropriate. In determining the acceptability of contract offers, the Secretary shall take into consideration the extent of the diversion to be undertaken by the producers and the productivity of the acreage diverted. The Secretary shall limit the total acreage to be diverted under agreements in any county or local community so as not to affect adversely the econony of the county or local community.

Any additional acreage reduction under a PLD program would be at a producer's option. If such a program were implemented, payments for such diversion would be in cash or commodity certificates.

Comments are requested with respect to the need for an optional PLD and, if implemented, the provisions of such program.

f. Inventory Reduction Program (IRP)

Section 105C(g) of the 1949 Act provides that the Secretary may, for the 1988 crops of corn, grain sorghums, oats, and if designated by the Secretary, barley, make payments available to producers who: (1) Agree to forgo obtaining a loan or purchase agreement; (2) agree to forgo receiving deficiency payments; and (3) do not plant feed grains for harvest in excess of the crop acreage base reduced by one-half of any acreage required to be diverted from production under the announced ARP. Such payments shall be made in the form of feed grains owned by CCC. Payments under this program shall be determined in the same manner as established with respect to the marketing loan program.

Accordingly, the implementation of this program is considered to be dependent on whether a marketing loan program is also instituted. Comments are requested on whether the IRP should be implemented for the 1988 crop of feed grains.

g. Commodity Certificates

Section 107E of the 1949 Act provides that, in making in-kind payments under any feed grain program, the Secretary may (1) acquire and use commodities that have been pledged to CCC as security for price support loans, including loans made to producers under the FOR program and (2) use other commodities owned by CCC.

The Secretary may make in-kind payments: (1) By delivery of the commodity to the producer at a warehouse or other similar facility, as determined by the Secretary; (2) by the transfer of negotiable warehouse receipts; (3) by the issuance of certificates which CCC shall redeem for a commodity; and (4) by such other methods as the Secretary determines appropriate to enable the producer to receive payments in an efficient, equitable, and expeditious manner so as to ensure that the producer receives the same total return as if the payments had been made in cash.

Commodity certificates were issued with respect to the 1986 and 1987 feed grain price support and production adjustment programs. The use of such certificates include payment for diversion and deficiency payments. The Secretary proposes to issue commodity certificates for these types of payments with respect to the 1988 feed grain program, subject to the availability of commodities pledged as collateral for CCC loans, and CCC-owned stocks.

Accordingly, comments are requested with respect to the use of commodity certificates in making payments under the 1988 feed grain program.

h. Inclusion of Barley as an Eligible Commodity

Section 105C(c)(1)(A) of the 1949 Act gives the Secretary discretionary authority to include barley as a commodity which is eligible for "deficiency" payments under the feed grain program. Section 105C(g) of the 1949 Act gives the Secretary discretionary authority to include barley as a commodity which is eligible for IRP payments, if an IRP is implemented. In the past, barley has been included as an eligible commodity for the purpose of deficiency payments with the exception of the 1967, 1968 and 1971 programs. If barley were not included in the 1988 program, barley producers would not be eligible to receive "deficiency" payments under the feed grain program for their crops but would be eligible for price support loans and purchases and the FOR program.

A slight increase in barley planted acreage together with yield increases have brought the total supply of barley to an estimated 871 million bushels for the 1987/88 crop year. The 1986 crop of 610 million bushels was 11 million bushels above the previous record barley crop in 1984 while the 1987 crop is estimated at 550 million bushels. Barley demand has increased slightly. Carryover stocks of barley for the 1987/88 crop year are projected at about 330 million bushels which is above the level considered adequate. Accordingly, the Secretary proposes to make barley eligible for "deficiency" payments and, if an IRP is implemented, the Secretary proposes to make barley eligible for IRP payments.

Comments are requested on the inclusion of barley as a commodity for which "deficiency" payments/and IRP payment, will be made under the 1988 feed grain program.

i. Exemption of Malting Barley From an Acreage Limitation Program

Under section 105C(f)(2)(c) of the 1949 Act, the Secretary may provide that no producer of malting barley shall be required as a condition of eligibility for feed grain loans, purchases, and payments to comply with any acreage limitation if such producer has previously produced a malting variety barley, plants barley only for an acceptable malting variety for harvest, and meets other conditions as the Secretary may prescribe. Malting barley varieties have not been exempt from acreage limitation requirements in the past. Due to existing stocks of barley, the Secretary proposes to not exempt malting barley from an ARP with respect to the 1988 feed grain program.

Comments are requested with respect to exempting malting barley from an ARP.

j. Farmer-Owned Reserve (FOR) Program

Section 110 of the 1949 Act provides that, effective with the 1986 crop of feed grains, the Secretary shall formulate and administer a program under which producers will be able to store feed grains when in abundant supply, extend the time period for their orderly marketing, and provide for adequate, but not excessive, carryover stocks in order to ensure a reliable supply. The Secretary is required to establish safeguards to assure that feed grains held under the program shall not be utilized in any manner to unduly depress, manipulate, or curtail the free market.

Such a program is required to be established whenever the total quantity of feed grains stored under such program is less than 7 percent of the estimated total domestic and export usage during the then current marketing year and the market price of the commodity, as determined by the Secretary, does not exceed 140 percent of the nonrecourse loan rate for the commodity. In establishing such a program, original or extended price support loans for feed grains are to be made available under terms and conditions designed to encourage participation by producers. Loans made in accordance with this program shall be made at such level of support as the Secretary determines appropriate, but not less than the then current level of support available under the feed grain program. The program may provide for: (1) Repayment of such loans in not less than three years, with extensions as warranted by market conditions; (2) payments to producers for storage in such amounts and under such conditions as the Secretary determines appropriate to encourage the producers to participate in the program; (3) a rate of interest not less than the rate charged CCC by the United States Treasury, except the Secretary may waive or adjust such interest as the Secretary deems appropriate to effectuate the purposes of section 110; (4) recovery of amounts paid for storage, and for the payment of additional interest or other charges if such loans are repaid by producers when the total amount of feed grains in storage under this program is below the maximum limits for such storage and the market price for feed grains is below the higher of: (i) 140 percent of the nonrecourse loan rate for feed grains or (ii) the established "target" price; and (5) conditions designed to induce producers to redeem and market the feed grains securing such loans without regard to the maturity dates thereof whenever the Secretary determines that the market price for the commodity has attained the higher of: (i) 140 percent of the nonrecourse loan rate for the commodity or (ii) the established price for such commodity.

The rate of interest applicable to loans made under this program shall be not less than the rate of interest charged CCC by the United States Treasury. However, the Secretary may (1) waive or adjust the rate of interest to effectuate the purpose of the program and (2) increase the applicable rate of interest as determined appropriate to encourage the orderly marketing of feed grains securing such loans if the market price for feed grains exceed the higher of 140 percent of the nonrecourse loan rate or the established "target" price.

The Secretary may require producers to repay the principal amount of loans obtained under this program, plus accrued interest and other related charges, prior to the maturity date of such loans, if the Secretary (1) determines that emergency conditions exist which require that feed grains be made available to meet urgent domestic or international needs and (2) reports such determination to the President, the Committee on Agriculture Nutrition, and Forestry of the Senate, and the Committee on Agriculture of the House of Representatives at least fourteen days before taking such action.

Announcement of terms and conditions of the program are to made as far in advance of making loans as practicable and shall specify the quantity of feed grains to be stored under the program which is determined appropriate to promote the orderly marketing of feed grains. Prior to the harvest of each crop of feed grains, upper limits on the total quantity of feed grains that may be stored under such program during the marketing year for such crop are to be established. The upper limit for feed grains shall not exceed 15 percent of the estimated total domestic and export usage during the marketing year for such crop. Such upper limit may be increased, but not in excess of 110 percent, if the Secretary determines that the higher limits are necessary to achieve the purpose of the program.

Based on estimated total domestic and export usage of corn for the 1987/88 marketing year of about 7 billion bushels, the minimum FOR quantity would be 490 million bushels and the maximum quantity would be 1,050 million bushels. As of April 15, 1987, the quantity of corn in the FOR was 1,254 million bushels. Based upon: (1) The ability of producers to place corn pledged as collateral for maturing 1985 price support loans in the FOR; (2) removals from the FOR and; (3) FOR contract maturities, it is estimated that the FOR quantity on hand during the 1987/88 marketing year will exceed the statutory maximum level. Accordingly, the Secretary proposes not to permit entry of maturing 1987 crop feed grain price support loans into the FOR if the FOR quantities during the 1987/88 marketing years are above the statutory minimum level. A similar determination would be made for the 1988 crop.

Comments on FOR program provisions are requested including whether 1987 and 1988 crop feed grain regular CCC price support loans should be permitted entry into the FOR.

k. Feed Grain Export Certificate Program

Section 107F(a)(1) of the 1949 Act provides that the Secretary may establish a program for the 1988 crop of feed grains to provide incentives for the export of feed grain from private stocks. Under such a program, export certificates would be issued to producers who comply with the terms and conditions of the 1988 feed grain price support and production adjustment program. Each certificate would bear a monetary denomination and specify a quantity of feed grains. The aggregate quantity of feed grains specified on the certificate would be equal to the quantity which is determined by multiplying: (1) The feed grain acreage planted on the farm by, (2) the farm program payment yield by, (3) an export production factor. Such factor for a crop is determined by dividing (1) the estimated quantity of feed grains harvested domestically that will not be used domestically and will be available for export less the portion of the crop expected to be added to carryover stocks by (2) the estimated quantity of the crops which will be harvested domestically.

Feed grain export certificates would be distributed among eligible producers in a manner which would ensure that each producer receives certificates having an aggregate face value representing an equal rate of return per bushel of feed grains produced. In determining such rate of return, regional variations in costs incurred to market feed grains including transportation costs shall be considered.

The face value of the export certificates shall be redeemed by the Secretary for cash or a quantity of the commodity involved having a current fair market value equal to the amount of the face value of the certificate upon presentation of such certificate by a holder who exports the quantity of feed grain shown on the certificate.

The total value of the feed grain export certificates would be equal to an amount which is not less than the product determined by multiplying: (1) 11 cents per bushel of corn and such amounts for grain sorghums, oats, and, if designated by the Secretary, barley, as the Secretary determines fair and reasonable in relation to the amount specified for corn, by, (2) the acreage planted for harvest by 1988 feed grain program participants by, (3) the average of program yields for the crop.

The following example illustrates how a corn export certificate value and quantity would be determined:

1. Estimated Total Product (mil. bu.)	7,915
2. Estimated Quantity Available For Export (mil. bu.)	1,600
3. Participating Acreage For Harvest (mil. bu.)	52.5
4. Program Yield (bu/ac)	106.0
5. Export Production Factor [#2/#1] (Percent)	.2021
6. Total Certificate Quantity [#3×#4×#5] (mil. bu.)	1,125
7. Total Certificate Value [$0.11×#3×#4] (mil. $)	612
8. Certificate Value Per Bushel [#7/#6] ($/bu.)	0.54

With the above example, a producer participating in the 1988 corn program would be issued export certificates in a quantity which is equal to a quantity which is determined by multiplying: (1) The producer's program acreage by, (2) the program yield by, (3) the export production factor. The monetary value of these certificates would be the bushel quantity times the unit value ($0.54). These certificates would be made available after the marketing of such quantity of corn. If this program is implemented, it is expected that feed grains accompanied by an export certificate would be traded at a premium to noncertificate feed grains.

Comments are requested on whether an export certificate program should be implemented for the 1988 crops of feed grains.

l. Inclusion of Corn Silage Grain Equivalent in Loans and Purchases Program

Section 403 of the Food Security Act of 1985 provides that the Secretary may make available loans and purchases to producers on a farm who: (1) For silage, cut corn (including mutilated corn) that the producers have produced in a crop year or purchase or exchange corn (including mutilated corn) that has been produced in such crop year by another producer and (2) participate in an acreage limitation or set-aside program established for such crop year.

Such loans and purchases may be made on the quantity of corn of the same crop, other than the corn cut for silage, which is acquired by the producer and which is equal to the number of acres cut for silage multiplied by the lower of the farm program yield or the actual yield on a field, as determined by the Secretary, that is similar to the field from which silage was obtained. Corn which is to be substituted for corn cut for silage could either be purchased in the market or be produced by the producer on a non-complying farm.

In 1986, 6.2 million acres of corn was cut for silage, with about 60 percent of silage production occuring in ten States: California, Minnesota, New York, South Dakota, Pennsylvania, North Dakota, Michigan, Iowa and Nebraska. These States also represent major areas of livestock production, especially dairy production.

Comments are requested whether loans and purchases should be available for corn silage grain equivalent in accordance with the 1988 feed grain program.

m. Other Related Provisions.

A number of other determinations must be made in order to carry out the feed grain loan and purchase program such as: (1) Commodity eligibility; (2) premiums and discounts for grades, classes, and other qualities; (3) establishment of county loan purchase rates; and (4) such other provisions as may be necessary to carry out the program.

Consideration will be given to any data, views and recommendations that may be received relating to these issues.

Authority: Secs. 105C, 107E, 108F, and 110 of the Agricultural Act of 1949, as amended; 99 Stat. 1445, 1395, as amended, 1448, 91 Stat. 951, as amended, (7 U.S.C. 1444e, 1445b–4, 1445b–5, and 1445e); sec. 403 of the Food Security Act of 1985, as amended, 99 Stat. 1406 (7 U.S.C. 1444e–1).

Signed at Washington, DC, on May 29, 1987.

Milton J. Hertz,

Executive Vice President, Commodity Credit Corporation.

[FR Doc. 87-16111 Filed 7-15-87; 8:45 am]

BILLING CODE 3410-05-M

DEPARTMENT OF COMMERCE

International Trade Administration

[A-428-062]

Animal Glue and Inedible Gelatin From West Germany; Preliminary Results of Antidumping Duty Administrative Review and Tentative Determination to Revoke in Part

AGENCY: International Trade Administration, Import Administration, Department of Commerce.

ACTION: Notice of preliminary results of antidumping duty administrative review and tentative determination to revoke in part.

SUMMARY: In response to a request by one respondent, the Department of Commerce has conducted an administrative review of the antidumping finding on animal glue and inedible gelatin from West Germany. The review covers one exporter of this merchandise and the period December 1, 1985 through November 30, 1986. The review indicates no shipments during the period.

As a result of the review, the Department has tentatively determined to revoke the finding with respect to that firm.

Interested parties are invited to comment on these preliminary results and tentative determination to revoke in part.

EFFECTIVE DATE: July 16, 1987.

FOR FURTHER INFORMATION CONTACT: Dennis U. Askey or John R. Kugelman, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230; telephone: (202) 377-2923/3601.

SUPPLEMENTARY INFORMATION:

Background

On April 5, 1984, the Department of Commerce ("the Department") published in the **Federal Register** (49 FR 13565) the final results of its last administrative review of the antidumping finding on animal glue and inedible gelatin from West Germany (42 FR 64115, December 22, 1977). After the promulgation of our new regulations, one exporter requested in accordance with § 353.53a(a) of the Commerce Regulations that we conduct the administrative review. We published the new initiation on January 20, 1987 (52 FR 2123). The Department has now conducted that administrative review in accordance with section 751 of the Tariff Act of 1930 ("the Tariff Act").

Scope of the Review

The United States has developed a system of tariff classification based on the international harmonized system of Customs nomenclature. Congress is considering legislation to convert the United States to this Harmonized System ("HS") by January 1, 1988. In view of this, we will be providing both the appropriate *Tariff Schedules of the United States Annotated* ("TSUSA") item numbers with our product descriptions on a test basis, pending Congressional approval. As with the TSUSA, the HS item numbers are provided for convenience and Customs purposes. The written description remains dispositive.

We are requesting petitioners to include the appropriate HS item number(s) as well as the TSUSA item number(s) in all new petitions filed with the Department. A reference copy of the proposed Harmonized System schedule is available for consultation at the Central Records Unit, Room B-099, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230. Additionally, all Customs offices have reference copies, and petitioners may contact the Import Specialist at their local Customs office to consult the schedule.

Imports covered by the review are shipments of animal glue and inedible gelatin, of which there are two principal types, hide glue and bone glue. Animal glue is an organic colloid of protein derivation. There is no significant difference between animal glue and inedible gelatin. Animal glues are odorless, dry, hard, hornlike materials. They are used as general purpose adhesives in industries producing abrasives, paper containers, book and magazine bindings, and leather goods. They are also used as sizing agents and as colloids in emulsions and cleaning compounds. Animal glue and inedible gelatin are currently classifiable under TSUSA items 455.4000 and 455.4200. These products are currently classifiable under HS item numbers 3503.00.20 and 3506.10.10.

The review covers one exporter of West German animal glue and inedible gelatin, G. Conradt & Sohn ("Conradt"), and the period December 1, 1985 through November 30, 1986. There were no known shipments of this merchandise by Conradt to the United States during the period.

Preliminary Results of the Review and Tentative Determination to Revoke in Part

As a result of our review, we preliminarily determine that the following margin exists during the period:

Manufacturer/exporter	Time period	Margin (percent)
Conradt	12/85-11/86	[1] 67.0

[1] No shipments during the period.

Interested parties may submit written comments on these preliminary results and tentative determination to revoke in part within 30 days of the date of publication of this notice and may request a hearing within 8 days of the date of publication. Any hearing, if requested, will be held 30 days after the date of publication or the first workday thereafter. The Department will publish the final results of the administrative review including the results of its analysis of any such comments or hearing.

Conradt requested partial revocation of the finding and, as provided for in § 353.54(e) of the Commerce Regulations, has agreed in writing to an immediate suspension of liquidation and reinstatement in the finding under circumstances specified in the written agreement. Conradt had no shipments for more than nine years.

Therefore, we tentatively determine to revoke the antidumping finding on animal glue and inedible gelatin from West Germany with respect to Conradt. If this partial revocation is made final, it will apply to all unliquidated entries of this merchandise manufactured and exported by Conradt, and entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice.

Further, as provided for by § 353.48(b) of the Commerce Regulations, the Department shall require a cash deposit of estimated antidumping duties of 67 percent for Conradt. For any shipments from the six remaining known manufacturers/exporters and the one known third-country reseller not covered by this review, the cash deposit will continue to be at the rate published in the final results of the last administrative review for each of those firms (49 FR 13565, April 5, 1984). For any future entries of this merchandise from a new exporter, not covered in this or prior administrative reviews, whose first shipments occurred after November 30, 1986 and who is unrelated to the reviewed firm or any previously reviewed firm, no cash deposit shall be required. These deposit requirements are effective for all shipments of West German animal glue and inedible gelatin entered, or withdrawn from warehouse, for consumption on or after the date of publication of the final results of this administrative review.

This administrative review, tentative determination to revoke in part, and notice are in accordance with sections 751 (a)(1) and (c) of the Tariff Act (19 U.S.C. 1675 (a)(1), (c)) and §§ 353.53a and 353.54 of the Commerce Regulations (19 CFR 353.53a, 353.54).

Dated: July 11, 1987.

Gilbert B. Kaplan,

Deputy Assistant Secretary, Import Administration.

[FR Doc. 87-16171 Filed 7-15-87; 8:45 am]

BILLING CODE 3510-DS-M

[A-588-404]

Fabric Expanded Neoprene Laminate From Japan, Preliminary Results of Antidumping Duty, Administrative Review

AGENCY: International Trade Administration, Import Administration, Department of Commerce.

ACTION: Notice of preliminary results of antidumping duty administrative review.

SUMMARY: In response to requests by a respondent and the petitioner, the Department of Commerce has conducted an administrative review of the antidumping duty order on fabric expanded neoprene laminate from Japan. The review covers two manufacturers of this merchandise exported to the United States, and the

period March 15, 1985 through June 30, 1986. The review indicates the existence of dumping margins during the period.

Interested parties are invited to comment on these preliminary results.

EFFECTIVE DATE: July 16, 1987.

FOR FURTHER INFORMATION CONTACT: Anne D'Alauro or Maureen Flannery, Office of Compliance, International Trade Administration, U.S. Department of Commerce, Washington, DC 20230; telephone: (202) 377–2923/5255.

SUPPLEMENTARY INFORMATION:

Background

On July 19, 1985, the Department of Commerce ("the Department") published in the **Federal Register** (50 FR 29466) an antidumping duty order on fabric expanded neoprene laminate ("FENL") from Japan. In accordance with 19 CFR 353.53a(a), we received requests for review from the petitioner and one respondent. We published a notice of initiation on August 25, 1986 (51 FR 30259). The Department has now conducted that administrative review in accordance with section 751 of the Tariff Act of 1930 ("the Tariff Act")

Scope of the Review

The United States has developed a system of tariff classification based on the international harmonized system of Customs nomenclature. Congress is considering legislation to convert the United States to this Harmonized System ("HS") by January 1, 1988. In view of this, we will be providing both the appropriate *Tariff Schedules of the United States Annotated* ("TSUSA") item numbers and the appropriate HS item numbers with our product descriptions on a test basis, pending Congressional approval. As with the TSUSA, the HS item numbers are provided for convenience and Customs purposes. The written description remains dispositive.

We are requesting petitioners to include the appropriate HS item number(s) as well as the TSUSA Item number(s) in all new petitions filed with the Department. A reference copy of the proposed Harmonized System schedule is available for consultation at the Central Records Unit, Room B–099, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230. Additionally, all Customs offices have reference copies, and petitioners may contact the Import Specialist at their local Customs office to consult the schedule.

Imports covered by the review are shipments of FENL currently provided for in items 355.81, 355.82, 359.50 and 359.60 of the TSUSA. These products are currently classifiable under HS item numbers 5906.91.20, 5906.99.20, 5911.10.20, 5906.91.25, 5906.99.25 and 5602.10.00.

The review covers two manufacturers of Japanese FENL, and the period March 15, 1985 through June 30, 1986.

Yamamoto Corporation ("Yamamoto") failed to respond to the Department's antidumping questionnaire. The Department consequently used the best information available for assessment and antidumping duties cash deposit purposes. The best information available was Yamamoto's rate from the fair value investigation.

United States Price

In calculating United States price, the Department used purchase price as defined in section 772 of the Tariff Act. Purchase price was based on the packed f.o.b. or c.&f. price to unrelated purchasers in the United States. Where applicable, we made adjustments for foreign inland freight, foreign brokerage and handling fees, and ocean freight. No other adjustments were claimed or allowed.

Foreign Market Value

In calculating foreign market value the Department used home market price or constructed value, both as defined in section 773 of the Tariff Act. Home market price was used when sufficient quantities of such or similar merchandise were sold in the home market to provide a basis for comparison. When insufficient quantities of such or similar merchandise were sold in either the home market or third countries, we used constructed value.

Home market price was based on the packed delivered and ex-factory price to unrelated purchasers in the home market, with adjustments, where applicable, or inland freight, handling charges, differences in the physical characteristics of the merchandise, and differences in the cost of credit and packing. No other adjustments were claimed or allowed.

Constructed value consisted of the sum of the cost of materials, fabrication, general expenses, profit and the cost of packing. The amount added for general expenses was the statutory minimum of 10 percent of the sum of materials and fabrication costs since actual costs for general expenses were less than that amount. We used Heiwa's profit rate for its sales of FENL products during the period since this rate exceeded the statutory minimum of eight percent of the sum of the cost of materials, fabrication, and general expenses. We adjusted for differences in credit expenses. No other adjustments were claimed or allowed.

Preliminary Results of Review

As a result of our comparison of United States price to foreign market value, we preliminarily determined that the following margins exist:

Manufacturer	Time period	Margin percent
Heiwa Rubber Industries	3/15/85-6/30/86	0.71
Yamamoto Corporation	3/15/85-6/30/86	3.09

Interested parties may submit written comments on these preliminary results within 30 days of the date of publication of this notice, may request disclosure within 5 days of the date of publication, and may request a hearing within 8 days of the date of publication. Any hearing, if requested, will be held 30 days after the date of publication or the first workday thereafter. Any request for an administrative protective order must be made no later than 5 days after the date of publication. The Department will publish the final results of the administrative review including the results of its analysis of any such comments or hearing.

The Department shall determine, and the Customs Service shall assess, antidumping duties on all appropriate entries. Individual differences between United States prices and foreign market value may vary from the percentages stated above. The Department will issue appraisement instructions directly to the Customs Service.

Further, as provided for by 19 CFR 353.48(b), a cash deposit of estimated antidumping duties based on the above margins shall be required for these firms. For any future entries of this merchandise from a new exporter, not covered in this or prior reviews, whose first shipments occurred after June 30, 1986, and who is unrelated to any reviewed firm, a cash deposit of 0.71 percent shall be required. These deposit requirements are effective for all shipments of fabric expanded neoprene laminate, entered, or withdrawn from warehouse, for consumption on or after the date of publication of the final results of this administrative review.

This administrative review and notice are in accordance with section 751(a)(1) of the Tariff Act of 1930 (19 U.S.C. 1675(a)(1)) and 19 CFR 353.53a.

Dated: July 11, 1987.

Gilbert B. Kaplan,

Deputy Assistance Secretary for Import Administration.

[FR Doc. 87-16172 Filed 7-15-87; 8:45 am]

BILLING CODE 3510-DS-M

[A-588-016]

Ferrite Cores (of the Type Used in Consumer Electronic Products) From Japan; Final Results of Antidumping Duty Administrative Review and Revocation in Part

AGENCY: International Trade Administration, Import Administration, Department of Commerce.

ACTION: Notice of final results of antidumping duty administrative review and revocation in part.

SUMMARY: The Department of Commerce has completed its administrative review of the antidumping finding on ferrite cores (of the type used in consumer electronic products) from Japan.

The final results of our review and unchanged from those presented in the preliminary results, and we revoke the finding for this merchandise exported to the United States by Sony Corporation and Tohoku Metal Industries.

EFFECTIVE DATE: July 16, 1987.

FOR FURTHER INFORMATION CONTACT: Barbara Victor or David Mueller, Office of Compliance, International Trade Administration, U.S Department of Commerce, Washington, DC 20230; telephone: (202) 377-5222/2923.

SUPPLEMENTARY INFORMATION:

Background

On April 9, 1987, the Department of Commerce ("the department") published in the **Federal Register** (52 FR 11524) the preliminary results of its administrative review and intent to revoke in part the antidumping finding on ferrite cores (of the type used in consumer electronic products) from Japan (36 FR 4877, March 13, 1971). We began this review under our old regulations. After the promulgation of our new regulations, three manufacturers and/or exporters requested in accordance with 353.53a(a) of the Commerce Regulations that we complete the administrative review. We have now completed the administrative review in accordance with section 751 of the Tariff Act of 1930 ("the Tariff Act").

Scope of the Review

The United States has developed a system of tariff classification based on the international harmonized system of Customs nomenclature. Congress is considering legislation to convert the United States to this Harmonized System ("HS") by January 1, 1988. In view of this, we will be providing both the appropriate *Tariff Schedule of the United States* ("TSUS") item numbers and the appropriate HS item numbers with our product descriptions on a test basis, pending Congressional approval. As with the TSUS, the HS item numbers are provided for convenience and Customs purposes. The written description remains dispositive.

We are requesting petitioners to include the appropriate HS item numbers as well as the TSUS item numbers in all new petitions filed with the Department. A reference copy of the proposed Harmonized System schedule is available for consultations in the Central Records Unit, Room B-099, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230. Additionally, all Customs offices have reference copies, and petitioners may contact the Import Specialist at their local Customs office to consult the schedule.

Imports coverd by the review are magnetically soft ferrite magnets which are usually wound with wire. The merchandise is magnetized with the induction of electric current and is of the type commonly used as components in consumer electronic products such as household television receivers, projection television sets, radios, stereos and high fidelity radio systems, automobile radios, eletronic home computers, etc. Ferrite cores are currently classifiable under item 535.1240 of the Tariff Schedules of the United States Annotated. This product is currently classifiable under HS item number 8504.90.00.

The review covers three manufacturers and/or exporters of Japanese ferrite cores and various periods from March 1, 1983 through February 28, 1986.

Analysis of Comments Received

We gave interested parties an opportunity to comment on the preliminary results and intent to revoke in part. We received a comment from one respondent.

Comment 1: Matsushita Electric Trading Co., Ltd. (MET), requests that the Department revoke the finding with respect to MET because from April 1979 through February 1983 there were no MET sales at less than fair value and for four years after February 1983 there were no requests for administrative review by a domestic interested party, indicating a lack of interest. MET believes that this constitutes the changed circumstances which are grounds for revocation under § 353.54(c) of the Commerce Regulations.

Department's Position: We disagree. Matsushita withdrew its request that its entries for the period be reviewed. Accordingly, the Department has not had occasion to verify that ferrite cores exported by Matsushita are not currently being sold at less than fair value, and is not in a position to conclude that such sales are not being made. The absence of requests for review by petitioners in itself does not constitute changed circumstances under our current regulations. It is also not evident that the domestic interested parties are not concerned with maintaining protection against, or prevention of, future sales at less than fair value afforded by the existence of the finding.

There may be any number of reasons why domestic parties have not requested a review in the three times they have had the opportunity to do so (requests were not necessary before August 1985). We do not feel free to conclude that the reason is disinterest in maintaining this finding, absent any positive indication to this effect from those domestic interested parties.

Final Results of Review and Revocation in Part

Based on our analysis of the comment received, the final results of review are the same as those presented in the preliminary results of review and we determine that the following margins exist:

Manufacturer/Exporter	Time period	Margin (percent)
Fuji Electrochemical Co., Ltd.	3/2/83-10/31/84	0
	3/1/85-2/28/86	1.08
Sony Corporation	3/1/84-8/06/84	[1] 0
Tohoku Metal Industries	3/1/83-8/06/86	[1] 28.00

[1] No shipments during the period.

The Department will instruct the Customs Service to assess antidumping duties on all appropriate entries. Individual differences between United

States price and foreign market value may vary from the percentage stated above. The Department will issue appraisement instructions on each exporter directly to the Customs Service.

Further, in accordance with section 751(a)(1) of the Tariff Act, the Department shall require a cash deposit of estimated antidumping duties for Fuji of 1.08 percent.

For the reasons set forth in the preliminary results of review and intent to revoke in part, we are satisfied that there is no likelihood of resumption of sales at less than fair value by Sony Corporation and Tohoku Metal Industries. This partial revocation applies to all unliquidated entries of this merchandise manufactured by Sony or Tohoku and entered, or withdrawn from warehouse, for consumption on or after August 6, 1984, the date of our tentative determination to revoke with respect to these firms. The Department will instruct the Customs Service not to assess antidumping duties on all appropriate entries for these firms.

For any shipment of this merchandise from a new exporter, not covered by this or prior administrative reviews, whose first shipments occurred after February 26, 1986 and who is unrelated to the reviewed firm or any other previously reviewed firm, a cash deposit of 1.08 percent shall be required. These deposit requirements are effective for all shipments of ferrite cores (of the type used in consumer electronic products) entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice and shall remain in effect until publication of the next administrative review.

This administrative review, partial revocation, and notice are in accordance with section 751(a)(1), and (c) of the Tariff Act (19 U.S.C. 1675(a)(1), (c)) and §§ 353.53a and 353.54 of the Commerce Regulations (19 CFR 353.53a, 353.54).

Dated: July 11, 1987.
Gilbert B. Kaplan,
Deputy Assistant Secretary for Import Administration.

[FR Doc. 87-16173 Filed 7-15-87; 8:45 am]
BILLING CODE 3510-DS-M

National Bureau of Standards

[Docket No. 60613-7069]

Approval of Federal Information Processing Standards Publications 130, Intelligent Peripheral Interface (IPI) and 131, Small Computer System Interface (SCSI)

AGENCY: National Bureau of Standards, Commerce.

ACTION: The purpose of this notice is to announce that the Secretary of Commerce (Secretary) has approved two new standards, which will be published as FIPS Publications 130, Intelligent Peripheral Interface (IPI), and 131, Small Computer System Interface (SCSI).

SUMMARY: On August 7, 1986, notice was published in the **Federal Register** (51 FR 28402-28406) that two Federal Information Processing Standards for IPI and SCSI were being proposed for Federal use.

The written comments submitted by interested parties and other material available to the Department relevant to these standards were reviewed by NBS. On the basis of this review, NBS recommended that the Secretary approve the standards as Federal Information Processing Standards (FIPS), and prepared a detailed justification document for the Secretary's review in support of that recommendation.

The detailed justification document which was presented to the Secretary, and which includes an analysis of the written comments received, is part of the public record and is available for inspection and copying in the Department's Central Reference and Records Inspection Facility, Room 6628, Herbert C. Hoover Building, 14th Street between Pennsylvania and Constitution Avenues, NW., Washington, DC 20230.

Each approved standard contains two portions: (1) An announcement portion which provides information concerning the applicability, implementation, and maintenance of the standard and (2) a specifications portion which deals with the technical requirements of the standard. Only the announcement portion of the standard is provided in this notice.

DATE: These standards are effective December 16, 1987. Agencies may use these standards prior to the effective date if they choose to do so.

ADDRESS: Interested parties may purchase copies of these new standards, including the technical specifications portions, from the National Technical Information Service (NTIS). Specific ordering information from NTIS for these standards is set out in the Where to Obtain Copies Section of the announcement portion of each standard.

FOR FURTHER INFORMATION CONTACT: Mr. William E. Burr, Institute for Computer Sciences and Technology, National Bureau of Standards, Gaithersburg, MD 20899, (301) 975-2914.

Dated: July 9, 1987.
Ernest Ambler,
Director.

Federal Information Processing Standards Publication 130

(date)

Announcing the Standard for Intelligent Peripheral Interface (IPI)

Federal Information Processing Standards Publications are issued by the National Bureau of Standards pursuant to section 111(f)(2) of the Federal Property and Administrative Services Act of 1949, as amended, Pub. L 89-306 (79 Stat. 1127), Executive Order 11717 (38 FR 12315, dated May 11, 1973) and Part 6 of Title 15 Code of Federal Regulations (CFR).

Name of Standard

Intelligent Peripheral Interface (IPI) (FIPS PUB 130).

Category of Standard

Hardware Standard, Interface.

Explanation

This standard defines the functional, electrical, and mechanical specifications for a 16-bit parallel master/slave bus interface, suitable for connecting a host computer or controller to mass storage peripherals. This standard also provides the following command set specifications:

(a). Device Specific Command Set for Magnetic Disk Drives for interconnecting one to eight disk drives acting as an IPI "bus slave" to a storage controller acting as an IPI "bus master". This command set places the minimum function in the drive which is consistent with a parallel bus interface; that is, data encoding/separation, serialization/deserialization, and sector or block format control.

(b). Device Generic Command Set for Magnetic and Optical Disks for higher level command set for interconnecting a host computer, acting as IPI bus master, and either a storage controller or a drive with an embedded storage controller, acting as IPI bus slave.

(c) Command Set for Generic Tape for interconnecting host computer, which functions as bus master, and one to eight tape storage controllers, which function as bus slaves.

This standard facilitates plug-to-plug interchangeability of storage equipment as a part of computer systems. This standard may be employed in lieu of FIPS PUB 60 and FIPS PUB 61, plus associated operational specifications (FIPS PUB 62, FIPS PUB 63, or FIPS PUB 97), whenever they would otherwise be required. Its use is encouraged for the connection of mass storage devices such as magnetic disk, optical disk, or tape drives, to minicomputer systems, where FIPS PUB 60 is not required.

The Government's intent in employing this standard is to reduce the cost of satisfying its data processing requirements through increasing its available alternative sources of supply for computer systems components at the time of initial system acquisition, as well as in system replacement and augmentation and in system component replacement. This standard is also expected to lead to improved reutilization of system components.

Approving Authority

Secretary of Commerce.

Maintenance Agency.

Department of Commerce, National Bureau of Standards (Institute for Computer Sciences and Technology).

Cross Index

(a) FIPS PUB 60–2, I/O Channel Interface.

(b) FIPS PUB 61–1, Channel Level Power Control Interface.

(c) FIPS PUB 62, Operational Specifications for Magnetic Tape Subsystems.

(d) FIPS PUB 63–1, Operational Specifications for Variable Block Rotating Mass Storage Subsystems.

(e) FIPS PUB 63–1, SUPPLEMENT, Additional Operational Specifications for Variable Block Rotating Mass Storage Subsystems.

(f) FIPS PUB 97, Operational Specifications for Fixed Block Rotating Mass Storage Subsystems.

(g) FIPS PUB 111, Storage Module Interfaces (with extensions for enhanced storage module interfaces).

(h) FIPS PUB 131, Small Computer System Interface (SCSI).

Objectives

The objectives of this standard are to:

- —Improve the interchangeability of storage equipment as part of computer systems
- —Reduce the cost of computer equipment by increasing alternative sources of supply
- —Improve the reutilization of system components
- —Facilitate the use of advanced technology by the Federal government.

Applicability

This standard applies to the connection of computers to storage peripheral device controllers, and is analogous to FIPS PUB 60, I/O Channel Interface, plus the operational specifications FIPS PUB 62, FIPS PUB 63, and FIPS PUB 97. When used with the device specific command set this standard is used to connect magnetic disk drives to a storage controller and is approximately analogous to FIPS PUB 111, Storage Module Interfaces.

For the acquisition of magnetic disk drives or subsystems, this standard may be cited as an alternative to specifying FIPS PUB 60 and 61, plus one of the associated operational specifications, FIPS PUB 63 or FIPS PUB 97, when FIPS PUB 60 would otherwise apply. This standard may also be cited as an alternative to specifying FIPS PUB 60, FIPS PUB 61, and FIPS PUB 62, for the acquisition of magnetic tape drives or subsystems.

A procuring agency may require vendors to verify that the interface on their products conforms to this standard. Agencies may employ means of verification such as that prescribed for FIPS PUB 60 by the **Federal Register** notice published on December 11, 1979 (44 FR 71444). In special cases, NBS assist agencies in evaluating conformance to this standard.

Specifications

Affixed. This standard shall be specified by American National Standards X3.129M–1986, X3.147M–1987, X3.132M–1987, and X3.130M–1986.

There are four incompatible electrical options in this standard.

(1) Three-State
(2) Voltage Mode Differential
(3) Curent Mode Differential
(4) Open Emitter

The Three-State drivers use single ended signals and are suitable for short distances (5m or less) within shielding enclosures. Products which utilize Three-State signals are not widely available and the use of this mode by agencies is therefore not recommended.

The two differential options are similar in many respects. As compared to the Three-State and Open Emitter options, both offer improved common mode noise characteristics. Common mode noise usually results when shifts occur in the ground potential at different points in the power distribution network. Therefore it is most likely to be a problem when computer equipments are powered from different distribution circuits. Both differential options are used with twisted pair cable.

Products which implement either current or voltage mode differential operation are both available. Federal users are cautioned that, despite their similarities, current and voltage mode IPI devices cannot be mixed on the same bus.

The open emitter option is similar to the electrical specifications of FIPS PUB 60. While this technology is well proven, it is not as fast as the other IPI options, and, when used over long distances, requires comparatively expensive coaxial cable signal paths. Use of this option by Federal agencies is not recommended.

The IPI bus includes control signals and two 8-bit paths called BUS A and BUS B. During the various states of the bus protocol where selection, command and status transfers take place BUS A carries signals "out" from the host (master) to the peripheral (slave) while BUS B carries signals "in" to the host from the peripherals. There are two "Information Transfer" (data transfer) modes. In "Single Octet Mode" BUS A is always out, while BUS B is in. In "Double Octet Mode" BUS A and BUS B operate in the same direction, either in or out, and are used to transfer 16 bits in parallel.

Most available IPI products implement Double Octet Mode operation. The use of Single Octet Mode storage products can increase but contention, even where the recording rate of the storage product is lower than the Single Octet Mode transfer rate. The use of Single Octet Mode storage products on high performance systems is therefore not recommended.

Implementation

This standard is effective December 16, 1987. Agencies may use this standard prior to the effective date if they choose to do so. All equipment which is within the scope of the Applicability provision of FIPS PUB 60, and which is ordered on or after the effective date of this standard, or procurement actions for which solicitation documents have not been issued by that date, must conform to the provisions of this standard or to FIPS PUB 60 plus associated power control and operational specification standards, or to any other permitted alternative to FIPS PUB 60, unless a waiver has been granted in accordance with the procedure described elsewhere in this publication.

Waivers

Since this standard is an alternative to FIPS PUB 60, plus associated power control and operational specification standards, waiver procedures for this standard shall be as designated in FIPS PUB 60. Waivers of this standard are not required where FIPS PUB 60 does not apply. Any waiver of FIPS PUB 60 also is a waiver of this standard.

Where To Obtain Copies

Copies of this publication are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. (Sale of the included specifications documents is by arrangement with the American National Standards Institute.) When ordering, refer to Federal Information Processing Standards Publication 130 (FIPS PUB 130), and title. Payment may be made by check, money order, purchase order, credit card or deposit account.

Federal Information Processing Standards Publication 131

(date)

Announcing the Standard for Small Computer System Interface (SCSI)

Federal Information Processing Standards Publications are issued by the National Bureau of Standards pursuant to section 111(f)(2) of the Federal Property and Administrative Services Act of 1949, as amended, Pub. L. 89–306 (79 Stat. 1127), Executive Order 11717 (38 FR 12315, dated May 11, 1973) and Part 6 of Title 15 Code of Federal Regulations (CFR).

Name of Standard

Small Computer System Interface (SCSI) (FIPS 131).

Category of Standard

Hardware Standard, Interface.

Explanation

This standard defines the functional, electrical, and mechanical specifications for an 8-bit parallel bus, suitable for connecting physically small computers to each other and to mass storage peripherals. It also defines the operational specifications (command sets) for the following devices:

(a) Sequential-Access Devices (e.g., magnetic tape)

(b) Direct-Access Devices (e.g., magnetic disks)

(c) Printer Devices

(d) Write-once Read Multiple Devices (e.g., optical disks)

(e) Read-only Direct-Access Devices (e.g., read only optical disks)

(f) Processor Devices

The Government's intent in employing this standard is to reduce the cost of satisfying its data processing requirements through increasing its available alternative sources of supply for computer systems components at the time of initial system acquisition, as well as in system replacement and augmentation and in system component replacement. This standard is also expected to lead to improved reutilization of system components.

Approving Authority

Secretary of Commerce.

Maintenance Agency

Department of Commerce, National Bureau of Standards (Institute for Computer Sciences and Technology).

Cross Index

(a) FIPS PUB 60–2, I/O Channel Interface.

(b) FIPS PUB 61–1, Channel Level Power Control Interface.

(c) FIPS PUB 62, Operational Specifications for Magnetic Tape Subsystems.

(d) FIPS PUB 63–1, Operational Specifications for Variable Block Rotating Mass Storage Subsystems.

(e) FIPS PUB 63–1, SUPPLEMENT, Additional Operational Specifications for Variable Block Rotating Mass Storage Subsystems.

(f) FIPS PUB 97, Operational Specifications for Fixed Block Rotating Mass Storage Subsystems.

(g) FIPS PUB 111, Storage Module Interfaces (with extensions for enhanced storage module interfaces).

(h) FIPS PUB 130, Intelligent Peripheral Interface.

Objectives

The objectives of this standard are to:

—Improve the interchangeability of storage equipment as part of computer systems

—Reduce the cost of computer equipment by increasing alternative sources of supply

—Improve the reutilization of system components

—Facilitate the use of advanced technology by the Federal government.

Applicability

This standard addresses the connection of small computers to peripheral devices with integral controllers. This standard is recommended for use in the acquisition of storage peripherals and small computer systems for office or laboratory use.

For the acquisition of magnetic disk subsystems, this standard may be cited as an alternative to specifying the FIPS PUB 60 and FIPS PUB 61, and either FIPS PUB 63 or FIPS PUB 97, for those instances when FIPS PUB 60 would apply. This standard may also be cited as an alternative to specifying FIPS PUB 60, FIPS PUB 61, and FIPS PUB 62, for the acquisition of magnetic tape subsystems. In general, FIPS PUB 60 does not apply to most of the small systems using this standard, and the use of this standard is recommended but not required in these cases.

A procuring agency may require vendors to verify that the interface on their products conforms to this standard. Agencies may employ means of verification such as that prescribed for FIPS PUB 60 by the **Federal Register** notice published on December 11, 1979 (44 FR 71444). In special cases, NBS may assist agencies in evaluating conformance to this standard.

Specifications

Affixed. This standard shall be specified by American National Standard X3.131M–1986.

1. Electrical Options

There are two incompatible electrical options in the specifications for the SCSI:

Single-ended. This option is more common and less expensive and should be employed with systems where the peripherals are in very close physical proximity to the computer, preferably on or in the same rack, chassis, or desk top. The maximum length of the single-ended SCSI bus is 6 m. All peripherals and computers connected by a single-ended SCSI bus should be powered from the same branch circuit to avoid potentially unreliable operation caused by common mode noise.

Differential. This option is recommended for use in electrically noisy environments, such as factories or laboratories, whenever peripherals and computers are separated by more than a few meters, and wherever it is possible that peripherals and computers may be powered from different branch circuits. The differential option is more tolerant of the effects of common mode noise and allows bus lengths of up to 25 m.

2. Bus Parity

It is recommended that agencies acquiring ADP equipment using the SCSI require implementation of bus parity.

3. Subsystems

Many vendors offer complete add-in storage subsystems using the SCSI for various personal and minicomputer systems. Such subsystems typically consist of:

(a) An enclosure containing a power supply, one or more device controllers, and one or more Winchester disk or streaming tape drives.

(b) A host adaptor which adapts the backplane bus of the host computer to the SCSI bus. This usually plugs into an expansion slot in the host computer.

(c) A cable connecting the host adaptor to the subsystem.

(d) A driver program which talks to the peripheral subsystem through the host adaptor. This driver frequently is included on read-only memory chips on the host adaptor.

There is no generally accepted standard for the interface between the computer and the host adaptor, and the driver program will be specific to a particular host adaptor. Moreover, many small computers support several operating systems; in general each operating system will require different driver software. The SCSI command sets offer a rich array of functionality and options. For this reason there is no guarantee that a driver program for direct-access device A will necessarily be able to properly operate direct-access device B, which implements a different set of options. It is usually possible, however, except in the case of emulating host adaptors (see below), for a knowledgeable user to write a driver program which can operate device B (usually by minor modification to the driver for A) if its source program is available. It is possible to write a driver which operates a wide range of SCSI products; however, such a driver may not take advantage of many optional features or may be quite complex.

There are two kinds of host adaptors: emulating or non-emulating. The emulating host adaptors are less common. They emulate a native peripheral controller of the host system, and do not, therefore require a special driver program. The host adaptor itself typically contains a microcomputer which translates native host system commands to SCSI bus commands. In general, such host adaptors are intended for particular SCSI peripheral products, and there is no user accessible driver program; therefore, it may be difficult to adapt such host adaptors to new SCSI peripheral subsystems.

4. Bus Arbitration Option

Both host adaptors and peripheral subsystems may or may not implement the bus arbitration option. A few older products may be incompatible with SCSI devices which do arbitrate. While there is no practical advantage to arbitration in many configurations where the SCSI is used to add an external disk driver to a personal computer, agencies may wish to require that all SCSI subsystems and host adaptors operate correctly with other arbitrating bus divices. With higher performance multiprogramming systems, where several storage devices may share the SCSI bus, there can be considerable performance gains when storage devices disconnect from the bus during long access delays, and this requires that bus arbitration be implemented. If two or more host computers are to share a SCSI bus, then the bus arbitration capability is required of both.

5. Levels of Conformance

Appendix E of X3.131–1986 contains recommendations on specifying levels of conformance to the Small Computer System Interface Standard. Three levels of conformance are specified.

Level 0 is the most basic level of conformance, and products conforming to level 0 may be incompatible with bus arbitration. These devices are suitable for use with simple, single-user personal computer systems.

Level 1 devices are similar to level 0, but host adaptors support arbitration.

Level 2 host adaptors support arbitration and other features which are desirable for performance reasons, while peripherals support all Extended commands, which enhance the functionality of devices.

In general, with current SCSI protocol integrated circuits, most of the bus hardware required for conformance level 2 is available at no extra cost; however, controller microcode and driver software requirements for conformance level 2 are more complex, and this may reasonably be reflected in the prices of products conforming to level 2. In addition, devices conforming to level 2 are likely to offer a higher general performance level, and this too may be reflected in their prices. It is nevertheless expected that nearly all newly designed SCSI products will conform to level 2, and current products conforming only to levels 0 and 1 will in time be supplanted by products conforming to level 2.

It is recommended that agencies procuring products using SCSI require conformance level 2 whenever:

(a) The products are to be used in multi-user time sharing systems;

(b) The products are to be used in a shared bus multi-processor system;

(c) The products are to be used in any other high performance system;

(d) The products may be used with a wide range of systems; or

(e) Maximum compatibility with future products is needed.

6. Cables and Connectors

Many SCSI storage products, particularly those intended for use as personal computer add-ons, are suitable for use only on the end of a SCSI bus. That is they have only one external connector with no provision for extending the bus through the storage subsystem, and provide internal bus termination. For electrical reasons the bus should be appropriately terminated at its end. Agencies intending to attach several subsystems to one SCSI bus (which supports up to eight bus devices, including host adaptors) should require that subsystems pass the bus through the enclosure and provide two external connectors, one of which is equipped with a removable terminator block. Note that, when calculating actual bus length, the bus length inside enclosures (but not stubs off the bus), should be included. Host adaptors frequently must reside at one or the other end of the SCSI bus.

The SCSI bus uses 18 signals, plus optional Terminator Power. Three kinds of 50 conductor bus connectors are provided for in the SCSI standard. One unshielded circuit card type connector is specified in the body of the standard, while two recommended shielded cable connectors are described in Appendix D. The non-shielded device and cable connectors are normally employed to run as unshielded flat ribbon bus cable between circuit cards in a single shielding enclosure. Users are cautioned that the external use of an unshielded cable between enclosures may result in a violation of FCC Regulations, Part 15, Subpart J, governing radio frequency radiation by computer equipment in the United States, and is generally unsound practice.

Two shielded connectors are described in Appendix D. Some products do not use either of these connectors with external cables. This may be for size reasons; i.e., there may not physically be space for the standard connectors.

In differential implementations, two separate conductors (preferably twisted pairs) are required per signal, plus a path for DIFFSENS (a signal which can be used to disable differential drivers if they are inadvertently plugged in a single-ended bus) and two paths for Terminator Power. No electrical compromise need be involved in reducing the number of paths indentified as Ground in the SCSI standard.

In single-ended buses a total of 30 conductive paths are assigned to ground. Conservative design rules, followed by the SCSI standard, require that signal paths be separated by ground paths. This would imply a minimum 38 pin connector. Some products with limited room for connectors employ the common but nonstandard 25 pin subminiature D connector, allowing only 6 ground paths. Satisfactory operation may be achieved in such systems provided bus lengths are kept short and equipments are powered from a common outlet. With systems or subsystems using smaller, nonstandard connectors, Federal users are cautioned against substituting longer cables than those supplied by the vendor.

Special "T" tap external connectors are available allowing the SCSI bus to continue past products supporting only one external connector. Their use by Federal users is not recommended. The length of bus inside the enclosure may exceed the .1 m (single-ended) or .2 m (differential) maximum stub length allowed by the standard, causing unreliable bus operation.

7. Data Transfer Modes

Two data transfer modes, "asynchronous" and "synchronous," are defined in the standard. Most products use the asynchronous mode and all are capable of doing so. Each asynchronous transfer cycle uses a fully interlocked handshake which requires four signal propagation delays between the two SCSI ports. Where the bus length is short, on the order of 1 or 2 m, the asynchronous transfer can be as fast as the synchronous mode, however, at the maximum specified differential mode bus length of 25 m, signal propagation delays will limit the bus to a maximum transfer rate of about 1 Mbyte/sec. Synchronous mode transfers can achieve rates of 3 to 4 Mbytes/sec. across a 25 m bus. Only a few high performance storage products offer synchronous transfers and very few host adaptors can support them. More products are expected as the SCSI protocol integrated circuits supporting synchronous transfer become available.

The single-ended bus is limited to 6 m for electrical reasons. While RS-485 compatible differential drivers are able to drive lines considerably longer than the specified limit of 25 m, this 25 m constraint is due to the timings chosen for the distributed arbitration algorithm used for the SCSI. If the bus is used as a point-to-point connection between a host and one peripheral without arbitration, then operation at distances well over 25 m are possible, and fairly high transfer rates can be achieved with the synchronous transfer option.

Implementation

This standard is effective December 16, 1987. Agencies may use this standard prior to the effective date if they choose to do so. All equipment which is within the scope of the Applicability provision of FIPS PUB 60, and which is ordered on or after the effective date of this standard, or procurement actions for which solicitation documents have not been issued by that date, must conform to the provisions of this standard or to FIPS PUB 60 plus associated power control and operational specification standard, or to any other permitted alternative to FIPS PUB 60, unless a waiver has been granted in accordance with the procedure described elsewhere in this publication.

Waivers

Since this standard is an alternative to FIPS PUB 60, plus associated power control and operational specification standards, waiver procedures for this standard shall be as designated in FIPS PUB 60. Waivers of this standard are not required where FIPS PUB 60 does not apply. Any waiver of FIPS PUB 60 also is a waiver of this standard.

Where to Obtain Copies

Copies of this publication are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. (Sale of the included specifications document is by arrangement with the American National Standards Institute.) When ordering, refer to Federal Information Processing Standards Publication 131 (FIPSPUB131), and title. Payment may be made by check, money order, purchase order, credit card or deposit account.

[FR Doc. 87-16176 Filed 7-15-87; 8:45 am]

BILLING CODE 3510-CN-M

COMMITTEE FOR THE IMPLEMENTATION OF TEXTILE AGREEMENTS

Extending Coverage of the Export Visa Requirement for Textiles and Textile Products Produced or Manufactured in Macau

July 10, 1987.

The Chairman of the Committee for the Implementation of Textile Agreements (CITA), under the authority contained in E.O. 11651 of March 3, 1972, as amended, has issued the directive published below to the Commissoner of Customs to be effective on July 16, 1987. For further information contact Diana Solkoff, International Trade Specialist (202) 377-4212.

Background

The Governments of the United States and the Republic of Macau have agreed to extend coverage of the existing export visa requirement to include man-made fiber textile products in Category 670 (flat goods, handbags and luggage) and silk blend and other vegetable fiber textiles and textile products in Categories 800, 810, 831-844, 847-859 and 863-899, produced or manufactured in Macau and exported to the United States on and after July 16, 1987. This coverage is in addition to the previously established coverage of cotton, wool, man-made fiber textiles and textile products and sweaters of silk blend and other vegetable fibers.

The visa arrangement is also amended to reflect that shipments of cotton, wool, man-made fiber, silk blend and other vegetable fibers imported for the personal use of the importer and not for resale, regardless of value, and properly marked commercial sample shipments valued at U.S. $250 or less do not require a visa or exempt certification for entry and shall not be charged to the Agreement levels.

Accordingly, in the letter published below, the Chairman of CITA directs the Commissioner of Customs to further amend the directive of November 17, 1981 (46 FR 57105) as noted above.

A description of the textile categories in terms of T.S.U.S.A. numbers was published in the **Federal Register** on December 13, 1982 (47 FR 55709), as amended on April 7, 1983 (48 FR 15175), May 3, 1983 (48 FR 19924), December 14, 1983 (48 FR 55607), December 30, 1983 (48 FR 57584), April 4, 1984 (49 FR 13397), June 28, 1984 (49 FR 26622), July 16, 1984 (49 FR 28754), November 9, 1984 (49 FR 44782), July 14, 1986 (51 FR 25386), July 29, 1986 (51 FR 27068) and in Statistical Headnote 5, Schedule 3 of the *Tariff Schedules of the United States Annotated* (1987).

Adoption by the United States of the Harmonized Commodity Code (HCC) may result in some changes in the categorization of textile products covered by this notice. Notice of any necessary adjustments to the limits affected by adoption of the HCC will be published in the **Federal Register.**

Ronald I. Levin,

Acting Chairman, Committee for the Implementation of Textile Agreements.

Committee for the Implementation of Textile Agreements

July 10, 1987

Commissioner of Customs,
Department of the Treasury, Washington, DC 20229

Dear Mr. Commissioner: This directive further amends, but does not cancel, the directive of November 17, 1981, as amended on February 3, 1987, from the Chairman of the Committee for the Implementation of Textile Agreements which directed you to prohibit entry and withdrawal from warehouse for consumption in the United States of cotton, wool, man-made fiber textiles and textile products and silk blend and other vegetable fiber sweaters, produced or manufactured in Macau for which the authorities in Macau had not issued an appropriate export visa.

Effective on July 16, 1987, the directive of November 17, 1981 is hereby further amended to require that man-made fiber textile products in Category 670 (flat goods, handbags and luggage) and silk blend and other vegetable fiber textiles and textile products in Categories 800, 810, 831–844, 847–859 and 863–899 also be visaed if exported from Macau on or after July 16, 1987.

In addition, cotton, wool, man-made fiber, silk blend and other vegetable fiber shipments imported for the personal use of the importer and not for resale, regardless of value, and properly marked commercial sample shipments valued at U.S. $250 or less do not require a visa or exempt certification for entry and shall not be charged to the Agreement levels.

The Committee for the Implementation of Textile Agreements has determined that these actions fall within the foreign affairs exception to the rulemaking provisions of 5 U.S.C. 553 (a)(1).

Sincerely,

Ronald I. Levin,

Acting Chairman, Committee for the Implementation of Textile Agreements.

[FR Doc. 87-16174 Filed 7-15-87; 8:45 am]

BILLING CODE 3510-DR-M

DEPARTMENT OF DEFENSE

Office of the Secretary

Defense Science Board Task Force on Tactical Directed Energy Weapons

ACTION: Notice of advisory committee meetings.

SUMMARY: The Defense Science Board Task Force on Tactical Directed Energy Weapons will reconvene in closed session on September 23 through 24 and October 6 through 7, 1987 at LTV Headquarters, Washington, DC.

The mission of the Defense Science Board is to advise the Secretary of Defense and the Under Secretary of Defense for Acquisition on scientific and technical matters as they affect the perceived needs of the Department of Defense. At these meetings the Task Force will review the original Task Force recommendations in light of changes in technology, threat, and requirements, and in the context of DoD and/or Congressional actions that may have affected the status of the original study effort.

In accordance with section 10(d) of the Federal Advisory Committee Act, Pub. L. 92-463, as amended (5 U.S.C. App. II (1982)), it has been determined that these DSB Task Force meetings, concern matters listed in 5 U.S.C. 552b(c)(1) (1982), and that accordingly these meetings will be closed to the public.

Patricia H. Means,

OSD Federal Register Liaison, Officer, Department of Defense.

July 13, 1987.

[FR Doc. 87-16147 Filed 7-15-87; 8:45 am]

BILLING CODE 3818-01-M

DEPARTMENT OF EDUCATION

Proposed Information Collection Requests

AGENCY: Department of Education.

ACTION: Notice of proposed information collection requests.

SUMMARY: The Director, Information Technology Services, invites comments on the proposed information collection requests as required by the Paperwork Reduction Act of 1980.

DATES: Interested persons are invited to submit comments on or before August 17, 1987.

ADDRESSES: Written comments should be addressed to the Office of Information and Regulatory Affairs, Attention: Desk Officer, Department of Education, Office of Management and Budget, 726 Jackson Place, NW., Room 3208, New Executive Office Building, Washington, DC 20503. Requests for copies of the proposed information collection requests should be addressed to Margaret B. Webster, Department of Education, 400 Maryland Avenue, SW., Room 5624, Regional Office Building 3, Washington, DC 20202.

FOR FURTHER INFORMATION CONTACT: Margaret B. Webster (202) 732-3915.

SUPPLEMENTARY INFORMATION: Section 3517 of the Paperwork Reduction Act of 1980 (44 U.S.C. Chapter 35) requires that the Office of Management and Budget (OMB) provide interested Federal agencies and the public an early opportunity to comment on information collection requests. OMB may amend or waive the requirement for public consultation to the extent that public participation in the approval process would defeat the purpose of the information collection, violate State or Federal law, or substantially interfere with any agency's ability to perform its statutory obligations.

The Director, Information Technology Services, publishes this notice containing proposed information collection requests prior to submission of these requests to OMB. Each proposed information collection, grouped by office, contains the following: (1) Type of review requested, e.g., new, revision, extension, existing or reinstatement; (2) title; (3) agency form number (if any); (4) freqency of collection; (5) the affected public; (6) reporting burden; and/or (7) recordkeeping burden; and (8) abstract. OMB invites public comment at the address specified above. Copies of the requests are available from Margaret Webster at the address specified above.

Dated: July 13, 1987.

Carlos U. Rice,

Director for Information Technology Services.

Office of Special Education and Rehabilitative Services

Type of Review: New

Title: Number of Personnel Employed and Additional Personnel Needed to Provide Early Intervention Services

Agency Form Number: B20-29P

Frequency: Annually

Affected Public: State or local governments

Reporting Burden:

  Responses: 58

  Burden Hours: 3596

Recordkeeping Burden:

  Recordkeepers: 0

  Burden Hours: 0

Abstract: This form will be used by State educational agencies to report the number of personnel employed and needed to provide early intervention services to handicapped infants and toddlers. The Department uses this information to monitor the State's compliance with Federal program regulations.

Type of Review: New

Title: Report of Early Intervention Services in Need of Improvement

Agency Form Number: B20-30P

Frequency: Annually

Affected Public: State or local governments

Reporting Burden:

  Responses: 58

  Burden Hours: 1508

Recordkeeping Burden:

  Recordkeepers: 0

  Burden Hours: 0

Abstract: This form will be used by State educational agencies to report to the Department the early intervention services in need of improvement as well as the number of handicapped infants and toddlers who are in need of these improved services. The Department uses this information to monitor the progress of State efforts to improve these services and to report this information to Congress.

Type of Review: New

Title: Report of Handcapped Infants and Toddlers Receiving Early

Intervention Services Under Part B and H of EHA
Agency Form Number: B20–31P
Frequency: Annually
Affected Public: State or local governments
Reporting Burden:
Responses: 58
Burden Hours: 2378
Recordkeeping Burden:
Recordkeepers: 0
Burden Hours: 0
Abstract: This form will be used by State and local educational agencies to report to the Department the number of handicapped infants and toddlers receiving early intervention services in each state. The Department uses this information to assess the progress, impact, and effectiveness of State efforts to implement such programs and to report this information to Congress.

Type of Review: New
Title: Report of Federal, State and Local Funds Expended for Early Intervention Services
Agency Form Number: B20–32P
Frequency: Annually
Affected Public: State or local governments
Reporting Burden:
Responses: 58
Burden Hours: 5974
Recordkeeping Burden:
Recordkeepers: 0
Burden Hours: 0
Abstract: This form is used by State educational agencies to report to the Department the amount of Federal, State and local funds expended for early intervention services. The Department uses this information for monitoring and Congressional reporting.

Office of Elementary and Secondary Education

Type of Review: Extension
Title: Application for Law Related Education Program
Agency Form Number: ED 740
Frequency: Annually
Affected Public: State or local governments; non-profit institutions
Reporting Burden:
Responses: 120
Burden Hours: 4800
Recordkeeping Burden:
Recordkeepers: 0
Burden Hours: 0
Abstract: This application is used by State and local educational agencies, and public or non-profit institutions to apply for grants under the Law Related Program. The Department uses this information to evaluate the proposed projects and to set the amount of each award in accordance with program regulations.

Office of Postsecondary Education

Type of Review: Reinstatement
Title: Financial Report for the Endowment Challenge Grant Program
Agency Form Number: E40–10P
Frequency: Annually
Affected Public: Non-profit institutions
Reporting Burden:
Responses: 175
Burden Hours: 175
Recordkeeping Burden:
Recordkeepers: 175
Burden Hours: 350
Abstract: The Endowment grant program consists of matching grants to institutions of higher education which they, in turn, invest in low-risk securities for 20 years. This form will be used by grantees to report to the Department what has happened to their investment and what they have done on their return on the investment. The Department would use the information collected to monitor grantees' compliance with regulations.

Type of Review: Reinstatement
Title: 1987–88 Electronic Fiscal Operations Report (FISAP) Registered Participant Survey
Agency Form Number: E40–25P
Frequency: Annually
Affected Public: State or local governments; businesses or other for-profit; non-profit institutions
Reporting Burden:
Responses: 1000
Burden Hours: 250
Recordkeeping Burden:
Recordkeepers: 0
Burden Hours: 0
Abstract: This survey will be used by institutions participating in the Electronic Fiscal Operations Report Process. The Department will use the data collected to evaluate the program and its effectiveness.

Type of Review: Reinstatement
Title: Application for Fulbright Hays Training Grants: Faculty Research Abroad and Doctoral Dissertation Research Programs
Agency Form Number: ED 7628
Frequency: Annually
Affected Public: Individuals or households; non-profit institutions
Reporting Burden:
Responses: 670
Burden Hours: 120,300
Recordkeeping Burden:
Recordkeepers: 0
Burden Hours: 0
Abstract: This form will be used by graduate students and faculty membes to apply for grants under the Fulbright-Hays fellowship program. The Department uses this information to make awards to institutions of higher education who administer the program.

Office of Vocational and Adult Education

Type of Review: Reinstatement
Title: Financial Status Report and Annual Performance Report for the Adult Education State Administered Program
Agency Form Number: ED 365, 365–1
Frequency: Annually
Affected Public: State or local governments
Reporting Burden:
Responses: 55
Burden Hours: 220
Recordkeeping Burden:
Recordkeepers: 55
Burden Hours: 4,400
Abstract: This form is used by State educational agencies to report the profile of adult education participants by educational functioning level, race, age, sex and special population group. The Department uses the data collected in accounting for the expenditure of funds and for monitoring program activities required by the approved State plan.

[FR Doc. 87–16146 Filed 7–15–87; 8:45 am]

BILLING CODE 400–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket Nos. QF87–499–000, et al.]

Small Power Production and Cogeneration Facilities; Qualifying Status; Certificate Applications, Etc.; Trafalgar Power, Inc., et al.

Comment date: August 17, 1987, in accordance with Standard Paragraph E at the end of this notice.

July 10, 1987.

Take notice that the following filings have been made with the Commission.

1. Trafalgar Power, Inc.

[Docket No. QF87–499–000]

On June 26, 1987, Trafalgar Power, Inc. (Applicant), of Smith and Canal Street, Franklin, New Hampshire 03235, submitted for filing an application for certification of a facility as a qualifying small power production facility pursuant to § 292.207 of the Commission's regulations. No determination has been made that the submittal constitutes a complete filing.

The 358 kW hydroelectric facility (FERC P.6878) will be located on Sandy Creek in Jefferson County, New York.

A separate aplication is required for a hydroelectric project license, preliminary permit or exemption from licensing. Comments on such applications are requested by separate public notice. Qualifying status serves only to establish eligibility for benefits provided by PURPA, as implemented by the Commission's regulations, 18 CFR Part 292. It does not relieve a facility of any other requirements of local, State or Federal law, including those regarding siting, construction, operation, licensing and pollution abatement.

2. Tennessee Gas Pipeline Co., a Division of Tenneco Inc.

[Docket No. QF87-509-000]

On June 30, 1987, Tennessee Gas Pipeline Company, a Division of Tenneco Inc. (Applicant), of P.O. Box 2511, Houston, Texas 77252, submitted for filing an application for certification of a facility as a qualifying small power production facility pursuant to § 292.207 of the Commisison's regulations. No determination has been made that the submittal constitutes a complete filing.

The proposed small power production facility will be located at the White Plains Meter Station (Meter Station No. 2-0093) Bronx Street Extension, White Plains, in Westchester County, New York. The facility will consist of a turbo expander connected to a generator set and a heat exchanger. The maximum electric power production capacity of the facility will be approximately 5 megawatts. The primary energy source will be waste energy from the reduction of gas pressure from transmission line pressure to distribution pressure. Use of natural gas, oil and coal in aggregate to preheat the high pressure natural gas will not exceed 25 percent of the total annual energy input to the facility during any calendar year period.

3. Trafalgar Power, Inc.

[Docket No. QF87-500-000]

On June 26, 1987, Trafalgar Power, Inc. (Applicant), of Smith and Canal Street, Franklin, New Hampshire 03235, submitted for filing an application for certification of a facility as a qualifying small power production facility pursuant to § 292.207 of the Commission's regulations. No determination has been made that the submittal constitutes a complete filing.

The 2,750 kW hydroelectric facility (FERC P.4900) will be located on the Black River in Oneida County, New York.

A separate aplication is required for a hydroelectric project license, preliminary permit or exemption from licensing. Comments on such applications are requested by separate public notice. Qualifying status serves only to establish eligibility for benefits provided by PURPA, as implemented by the Commission's regulations, 18 CFR Part 292. It does not relieve a facility of any other requirements of local, State or Federal law, including those regarding siting, construction, operation, licensing and pollution abatement.

4. Trafalgar Power, Inc.

[Docket No. QF87-501-000]

On June 26, 1987, Trafalger Power, Inc. (Applicant), of Smith and Canal Street, Franklin, New Hampshire 03235, submitted for filing an application for certification of a facility as a qualifying small power production facility pursuant to § 292.207 of the Commission's regulations. No determination has been made that the submittal constitutes a complete filing.

The 400 kW hydroelectric facility (FERC P. 5000) will be located on the Black River in Oneida County, New York.

A separate application is required for a hydroelectric project license, preliminary permit or exemption from licensing. Comments on such applications are requested by separate public notice. Qualifying status serves only to establish eligibility for benefits provided by PURPA, as implemented by the Commission's regulations, 18 CFR Part 292. It does not relieve a facility of any other requirements of local, State or Federal law, including those regarding siting, construction, operation, licensing and pollution abatement.

Standard Paragraph

E. Any person desiring to be heard or to protest said filing should file a motion to interevene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). All such motions or protest should be filed on or before the comment date. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,
Secretary.

[FR Doc. 87-16154 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. RP85-58-000, et al.]

El Paso Natural Gas Co., Filing

July 10, 1987.

Take notice that on June 30, 1987, El Paso Natural Gas Company (El Paso) tendered for filing workpapers and explanations substantiating that it has no change in rates for the calendar year 1987 regarding the impact of the 1986 Tax Reform Act and the Internal Revenue Code. El Paso states that this filing is made pursuant to the Director of OPPR's May 12, 1987 letter order in Docket No. RP85-58-000, *et al.*, and Article XII of the Stipulation and Agreement in Docket No. RP85-58-000, *et al.*, approved by Commission letter order of August 14, 1985. El Paso also submitted workpapers, explanation and *pro forma* tariff sheets reflecting the impact of said Federal tax legislation on its rates, effective January 1, 1988.

El Paso states that it has served copies of this filing on all parties of record in Docket No. RP85-58-000, *et al.*

Any person desiring to be heard or to protest said filing should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with Rules 214 and 211 of the Commission's Rules of Practice and Procedure. All such motions or protests should be filed on or before July 17, 1987. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,
Secretary.

[FR Doc. 87-16156 Filed 7-15-87; 8:45 am]

BILLING CODE 5717-01-M

[Docket No. CI86-282-002]

Fina Oil and Chemical Co., et al, Amendment of Application

July 10, 1987.

Take notice that on June 25, 1987, Fina Oil and Chemical Company, Petrofina Delaware, Incorporated, Fina Oil & Gas, Inc., and Fina Exploration, Inc. (Fina), filed to amend their application in Docket No. CI86-282-000, filed on March 24, 1986 for Order Permitting And Approving Limited-Term Partial Abandonment and for Blanket Certificate of Public Convenience and Necessity with PreGranted Abandonment, and Request for Hearing, in certain particulars more specifically explained below. This amendment is on file with the Commission and open to public inspection.

In its original application Fina sought authorization for two-year abandonment of sales to Transcontinental Gas Pipe Line Corporation (Transco) from specific reserves listed on Exhibit A thereto subject to Transco's right to recall such gas and for sales of such abandoned gas for a two-year period with pregranted abandonment. Fina now seeks to amend its application.

First, Fina now seeks the abandonment authorization on a permanent basis, rather than on a limited-term basis. Transco and Fina have amended their contracts covering the reserves identified on the original Exhibit "A" to permit Fina to take and market on any day any quantities of gas that Transco does not purchase on that day for its system supply. Fina will credit pro tanto toward the satisfaction of Transco's daily contract minimum quantity any quantities of gas Fina sells to third parties. Transco will transport such quantities pursuant to applicable "open-access" provisions of its tariff, if any, or pursuant to authorization obtained by Transco in a certificate application filed under section 7(c) of the Natural Gas Act (NGA), 15 U.S.C. 717f(c) (1982), on or about even date herewith. Accordingly Fina requests for the life of the reserves identified on Exhibit "A" permanent abandonment authorization for such quantities of gas as Transco elects not to purchase on any day.

Second, Fina filed a revised Exhibit "A" attached hereto, showing new deliverability values for the five OCS blocks.

Third, Fina seeks permanent sale-for-resale authorization for all gas for which abandonment authorization is obtained, with pregranted authorization to abandon any sale at the end of its contractual term.

Fourth, Fina wishes to clarify that it seeks identical authorizations for its working interest co-owners in the covered reserves only to the extent that they obtain any necessary contractual releases from their purchasers, agree to the provisions and conditions of the authorizations obtained hereby, and agree to allow Fina to sell their gas to alternate purchasers.

Any person desiring to be heard or to make any protest with reference to said application should on or before July 27, 1987, file with the Federal Energy Regulatory Commission, Washington, DC 20426, a petition to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to become a party in any proceeding herein must file a petition to intervene in accordance with the Commission's rules.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicant to appear or to be represented at the hearing.

Kenneth F. Plumb,

Secretary.

REVISED EXHIBIT "A"

Block	Purchaser	NGPA section	Fina's share of deliverability
West Cameron Area Block 436.	Gasco	102(d) 104	400
West Cameron Area Block 480.	Gasco	104	600
High Island Area Block 154/155.	Gasco	104	9,000
Ship Shoal Area, South Addition, Block A-246.	Transco	102(d) 104	1,200
Galveston Area Block 255/241 S/2.	Transco	104	1,000

[FR Doc. 87-16157 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. CI87-631-000]

Helmerich & Payne, Inc.; Application

July 10, 1987.

Take notice that on May 26, 1987, Helmerich & Payne, Inc. (Applicant), of 1579 E. 21st, Tulsa, Oklahoma 74114, filed an application pursuant to section 7 of the Natural Gas Act and the Commission's Regulations, for a Certificate of Public Convenience and Necessity to continue the sale for resale and delivery of natural gas in interstate commerce previously made by Shell Western E&P Inc., under the certificates issued in the docket numbers listed and the related rate schedules shown on the attached Exhibit "A". This application is on file with the Commission and open to public inspection.

By assignments dated July 31, 1986, and effective August 1, 1986, Shell Western E&P Inc. assigned a portion of the interests previously covered under its certificates and rate schedules listed in Exhibit A hereto to Applicant.

Any person desiring to be heard or to make any protest with reference to said application should on or before July 27, 1987, file with the Federal Energy Regulatory Commission, Washington, DC 20426, a petition to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to become a party in any proceeding herein must file a petition to intervene in accordance with the Commission's rules.

Under the procedure herein provided for, unless othewise advised, it will be unnecessary for Applicant to appear or to be represented at the hearing.

Kenneth F. Plumb,

Secretary.

EXHIBIT A

[Shell Western E&P Inc.]

Docket	FERC gas rate schedule No.	Purchaser and location
G-14348	37	West Texas Gathering Co., Emperor Field, Winkler County, TX
CI62-1512	73	El Paso Natural Gas Co., Yucca Butte Field, Pecos County, TX
CI67-1084	114	El Paso Natural Gas Co., Toro Field, Reeves County, TX
CI67-1095	115	El Paso Natural Gas Co., Hamon Field, Reeves County, TX
CI70-7	125	Transwestern Pipeline Co., Barstow Field, Ward County, TX
CI71-772	128	El Paso Natural Gas Co., Toro Field, Reeves County, TX

[FR Doc. 87-16158 Filed 7-15-87; 8:45 am]

BILLING CODE 7617-01-M

[Docket No. EL87-50-000]

Howell Gas Management Co.; Filing

July 9, 1987.

Take notice that on July 2, 1987, Howell Gas Management Company (HGM), a wholly-owned subsidiary of Howell Corporation (Howell), tendered for filing pursuant to Rule 207 of the Commission's Rules of Practice and Procedure, 18 CFR 385.207 (1987), a petition for a declaratory order clarifying the scope of and disclaiming jurisdiction under sections 203 and 205 of the Federal Power Act, 16 U.S.C. 824b and 824d. HGM states that the revenue it expects from certain proposed electric energy transactions will be outside the scope of sections 203 and 205 because the proposed transactions will not involve the use of jurisdictional "facilities" for the transmission or sale at wholesale of electric energy in interstate commerce.

Alternatively, HGM requests the Commission to waive regulations which may otherwise apply to the proposed transactions.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All such motions or protests should be filed on or before July 23, 1987. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

[FR Doc. 87-16159 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. ER87-522-000]

Pacific Power & Light Co.; Filing

July 9, 1987.

Take notice that on July 2, 1987, Pacific Power & Light Company (Pacific), an assumed business name of PacifiCorp, tendered for filing, Fourth Revised Sheet Nos. 8 and 9 superseding Third Revised Sheets 8 and 9, respectively, of Pacific's FERC Electric Tariff, Original Volume No. 4 (Tariff); and a Wholesale Power Purchase Agreement dated April 28, 1987 (Agreement), between Pacific and Cheyenne Light, Fuel and Power Company (Cheyenne), superseding a prior agreement designated as Service Agreement No. 8 to the Tariff.

Pacific requests waiver of Commission's notice requirements to permit the Agreement to become effective on May 1, 1987, which is the date of commencement of service.

Copies of the filing were served upon all parties hereto and the Wyoming Public Service Commission.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All such motions or protests should be filed on or before July 23, 1987. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

[FR Doc. 87-16160 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. CI87-254-001]

Salmon Resources Ltd.; Application

July 10, 1987.

Take notice that on June 29, 1987, Salmon Resources, Ltd. (Salmon), of Irongate IV, 777 South Wadsworth Boulevard, Suite 114, Lakewood, Colorado 80226, filed an application pursuant to sections 4 and 7 of the Natural Gas Act (NGA) and sections 154 and 157 of the Commission's Regulations, to include additional categories of gas in its blanket sales certificate issued in Docket No. CI87-254-000 by the Commission on May 1, 1987, *Citizens Energy Corporation, et al.*, Docket No. CI86-56-001, *et al.*, 39 FERC ¶ 61,106 (1987). In the instant application Salmon proposes that its blanket certificate be amended to include authorization for the sale for resale in interstate commerce of imported gas on the spot market, to the extent the Commission has any jurisdiction with respect to such sales. This application is on file with the Commission and open to public inspection.

Any person desiring to be heard or to make any protest with reference to said application should on or before July 27, 1987, file with the Federal Energy Regulatory Commission , Washington, DC 20426, a petition to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to become a party in any proceeding herein must file a petition to intervene in accordance with the Commission's rules.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for Applicant to appear or to be represented at the hearing.

Kenneth F. Plumb,

Secretary.

[FR Doc. 87-16161 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. ST87-2419-000, et al.]

Transcontinental Gas Pipe Line Corp., et al.; Self-Implementing Transactions

July 10, 1987.

Take notice that the following transactions have been reported to the Commission as being implemented pursuant to Part 284 of the Commission's Regulations, and sections 311 and 312 of the Natural Gas Policy Act of 1978 (NGPA).[1]

The "Recipient" column in the following table indicates the entity receiving or purchasing the natural gas in each transaction.

The "Part 284 Subpart" column in the following table indicates the type of transaction. A "B" indicates transportation by an interstate pipeline on behalf of an intrastate pipeline or a local distribution company pursuant to § 284.102 of the Commission's Regulations and section 311(a)(1) of the NGPA.

A "C" indicates transportation by an intrastate pipeline on behalf of an interstate pipeline or a local distribution company served by an interstate pipeline pursuant to § 284.122 of the Commission's Regulations and section 311(a)(2) of the NGPA. In those cases where Commission approval of a transportation rate is sought pursuant to § 284.123(b)(2), the table lists the proposed rate and the expiration date of the 150-day period for staff action. Any person seeking to participate in the proceeding to approve a rate listed in the table should file a petition to intervene with the Secretary of the Commission.

A "D" indicates a sale by an intrastate pipeline to an interstate pipeline or a local distribution company served by an interstate pipeline pursuant to § 284.142 of the Commission's Regulations and section 311(b) of the NGPA. Any interested person may file a complaint concerning such sales pursuant to § 284.147(d) of the Commission's Regulations.

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[1] Notice of a transaction does not constitute a determination that the terms and conditions of the proposed service will be approved or that the noticed filing is in compliance with the Commission's Regulations.

An "E" indicates an assignment by an intrastate pipeline to any interstate pipeline or local distribution company pursuant to § 284.163 of the Commission's Regulations and section 312 of the NGPA.

A "G" indicates transportation by an interstate pipeline on behalf of another interstate pipeline pursuant to § 284.222 and a blanket certificate issued under § 284.221 of the Commission's Regulations.

A "G–S" indicates transportation by an interstate pipeline company on behalf of any shipper pursuant to a § 284.223 and a blanket certificate issued under § 284.221 of the Commission's Regulations.

A "G(LT)" or "G(LS)" indicates transportation, sales or assignments by a local distribution company on behalf of or to an interstate pipeline or local distribution company pursuant to a blanket certificate issued under § 284.222 of the Commission's Regulations.

A "G(HT)" or "G(HS)" indicates transportation, sales or assignments by a Hinshaw Pipeline pursuant to a blanket certificate issued under § 284.222 of the Commission's Regulations.

Any person desiring to be heard or to make any protest with reference to a transaction reflected in this notice should on or before July 29, 1987, file with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants party to a proceeding. Any person wishing to become a party to a proceeding or to participate as a party in any hearing therein must file a motion to intervene in accordance with the Commission's Rules.

Kenneth F. Plumb,

Secretary.

Docket No.[1]	Transporter/seller	Recipient	Date filed	Subpart	Expiration date [2]	Transportation rate (¢/MMBTU)
ST87-2419	Transcontinental Gas Pipe Line Corp.	Bridgeline Gas Distribution Co	05-01-87	B		
ST87-2420	Transcontinental Gas Pipe Line Corp.	Houston Pipe Line Co	05-01-87	B		
ST87-2421	Natural Gas Pipeline Co. of America	Houston Pipe Line Co	05-01-87	B		
ST87-2422	Western Gas Supply Co	Mountain Fuel Resources, Inc	05-01-87	C		
ST87-2423	Transwestern Pipeline Co	Southern California Gas Co	05-01-87	B		
ST87-2424	Transwestern Pipeline Co	Southern California Gas Co	05-01-87	B		
ST87-2425	Northern Natural Gas Co	Seagull Shoreline System	05-01-87	B		
ST87-2426	Northern Natural Gas Co	Southern California Gas Co	05-01-87	B		
ST87-2427	Northern Natural Gas Co	Duluth Water & Gas Co	05-01-87	B		
ST87-2428	Northern Natural Gas Co	Minnegasco, Inc	05-01-87	B		
ST87-2429	Northern Natural Gas Co	Lear Gas Transmission Co	05-01-87	B		
ST87-2430	Northern Natural Gas Co	Northern Indiana Public Service Co	05-01-87	B		
ST87-2431	Northern Natural Gas Co	Natural Gas Inc	05-01-87	B		
ST87-2432	Northern Natural Gas Co	New Ulm Public Utilities Commission.	05-01-87	B		
ST87-2433	Williams Natural Gas Co	Kansas Public Service Company, Inc.	05-01-87	B		
ST87-2434	Transwestern Pipeline Co	West Texas Gas, Inc	05-01-87	B		
ST87-2435	Williams Natural Gas Co	Union Gas System, Inc	05-01-87	B		
ST87-2436	Texas Eastern Transmission Corp	Central Illinois Public Service Co	05-04-87	B		
ST87-2437	Panhandle Eastern Pipe Line Co	Indiana Gas Co., Inc	05-04-87	B		
ST87-2438	Panhandle Eastern Pipe Line Co	Citizens Gas and Coke Utility	05-04-87	B		
ST87-2439	Kentucky West Virginia Gas Co	Eastern Kentucky Production Co	05-04-87	G-EU		
ST87-2440	Transok, Inc	Panhandle Eastern Pipe Line Co	05-04-87	C	10-01-87	26.25
ST87-2441	Kentucky West Virginia Gas Co	Easstern Kentucky Production Co	05-04-87	G-EU		
ST87-2442	Kentucky West Virginia Gas Co	Auxier Road Gas Co	05-04-87	B		
ST87-2443	Endevco Pipeline Co	Texas Eastern Transmission Corp	05-04-87	C		
ST87-2444	Texas Eastern Transmission Corp	Western Kentucky Gas Co	05-04-87	B		
ST87-2445	Texas Eastern Transmission Corp	Columbia Gas of Ohio, Inc	05-04-87	B		
ST87-2446	Texas Eastern Transmission Corp	Brooklyn Union Gas Co	05-04-87	B		
ST87-2447	Panhandle Eastern Pipe Line Co	Ohio Gas Co	05-04-87	B		
ST87-2448	Panhandle Eastern Pipe Line Co	Battle Creek Gas Co	05-04-87	B		
ST87-2449	Panhandle Eastern Pipe Line Co	Central Illinois Light Co	05-04-87	B		
ST87-2450	Panhandle Eastern Pipe Line Co	Coastal States Gas Transmission Co.	05-04-87	B		
ST87-2451	Panhandle Eastern Pipe Line Co	Central Illinois Light Co	05-04-87	B		
ST87-2452	Trunkline Gas Co	Baltimore Gas & Electric Co., et al	05-04-87	B		
ST87-2453	Panhandle Eastern Pipe Line Co	Indiana Gas Co	05-04-87	B		
ST87-2454	Panhandle Eastern Pipe Line Co	Indiana Gas Co	05-04-87	B		
ST87-2455	Panhandle Eastern Pipe Line Co	Central Illinois Light Co	05-04-87	B		
ST87-2456	Panhandle Eastern Pipe Line Co	Consumers Power Co	05-04-87	B		
ST87-2457	Panhandle Eastern Pipe Line Co	Citizens Gas and Coke Utility	05-04-87	B		
ST87-2458	Panhandle Eastern Pipe Line Co	Indiana Gas Co	05-04-87	B		
ST87-2459	Panhandle Eastern Pipe Line Co	Indiana Gas Co	05-04-87	B		
ST87-2460	Channel Industries Gas Co	Alabama-Tennessee Natural Gas Co.	05-04-87	C		

Docket No.[1]	Transporter/seller	Recipient	Date filed	Subpart	Expiration date[2]	Transportation rate (¢/MMBTU)
ST87-2461	Tennessee Gas Pipeline Co	Consolidated Edison Co. of NY, Inc	05-04-87	B		
ST87-2462	SNG Intrastate Pipeline, Inc	Southern Natural Gas Co	05-04-87	C	10-01-87	25.00
ST87-2463	ANR Pipeline Co	Wisconsin Power and Light Co	05-04-87	B		
ST87-2464	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2465	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2466	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2467	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2468	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2469	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2470	ANR Pipeline Co	Northern Indiana Fuel & Light Co	05-04-87	B		
ST87-2471	Williams Natural Gas Co	KPL Gas Service Co	05-04-87	B		
ST87-2472	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2473	ANR Pipeline Co	Wisconsin Natural Gas Co	05-04-87	B		
ST87-2474	ANR Pipeline Co	Wisconsin Gas Co	05-04-87	B		
ST87-2475	ANR Pipeline Co	Wisconsin Gas Co	05-04-87	B		
ST87-2476	ANR Pipeline Co	Southern California Gas Co	05-04-87	B		
ST87-2477	ANR Pipeline Co	Wisconsin Gas Co	05-04-87	B		
ST87-2478	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2479	ANR Pipeline Co	Wisconsin Public Service Co	05-04-87	B		
ST87-2480	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2481	ANR Pipeline Co	Southeastern Michigan Gas Co	05-04-87	B		
ST87-2482	ANR Pipeline Co	Faustina Pipeline Co	05-04-87	B		
ST87-2483	ANR Pipeline Co	Pennsylvania Gas and Water Co	05-04-87	B		
ST87-2484	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2485	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2486	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2487	ANR Pipeline Co	Wisconsin Power and Light Co	05-04-87	B		
ST87-2488	ANR Pipeline Co	High Plains Natural Gas Co	05-04-87	B		
ST87-2489	ANR Pipeline Co	Wisconsin Natural Gas Co	05-04-87	B		
ST87-2490	ANR Pipeline Co	Northern Indiana Fuel & Light Co	05-04-87	B		
ST87-2491	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2492	ANR Pipeline Co	Wisconsin Gas Co	05-04-87	B		
ST87-2493	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2494	ANR Pipeline Co	Wisconsin Power and Light Co	05-04-87	B		
ST87-2495	ANR Pipeline Co	TXG Pipeline Co	05-04-87	B		
ST87-2496	ANR Pipeline Co	Delhi Gas Pipeline Corp	05-04-87	B		
ST87-2497	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2498	ANR Pipeline Co	Iowa Southern Utilities Co	05-04-87	B		
ST87-2499	ANR Pipeline Co	Michigan Consolidated Gas Co	05-04-87	B		
ST87-2500	Channel Industries Gas Co	THC Pipeline Co	05-05-87	C		
ST87-2501	Channel Industries Gas Co	Tennessee Gas Pipeline Co	05-05-87	C		
ST87-2502	Channel Industries Gas Co	Natural Gas Pipeline Co. of AM., et al.	05-05-87	CB		
ST87-2503	Texas Eastern Transmission Corp	Philadelphia Electric Co	05-05-87	B		
ST87-2504	United Gas Pipe Line Co	Louisiana State Gas Corp	05-05-87	B		
ST87-2505	United Gas Pipe Line Co	Mobile Gas Service Corp	05-05-87	B		
ST87-2506	Panhandle Eastern Pipe Line Co	Indiana Gas Co., Inc	05-05-87	B		
ST87-2507	Panhandle Eastern Pipe Line Co	East Ohio Gas Co	05-05-87	B		
ST87-2508	Panhandle Eastern Pipe Line Co	Citizens Gas and Coke Utility	05-05-87	B		
ST87-2509	Panhandle Eastern Pipe Line Co	Northern Indiana Public Service Co	05-05-87	B		
ST87-2510	Panhandle Eastern Pipe Line Co	Northern Illinois Gas Co	05-05-87	B		
ST87-2511	Williams Natural Gas Co	KPL Gas Service Co	05-05-87	B		
ST87-2512	Williams Natural Gas Co	KPL Gas Service Co	05-05-87	B		
ST87-2513	Tennessee Gas Pipeline Co	East Ohio Gas Co., et al	05-06-87	B		
ST87-2514	Northern Natural Gas Co	Amoco Gas Co	05-06-87	B		
ST87-2515	Northern Natural Gas Co	Iowa Public Service Co	05-06-87	B		
ST87-2516	Natural Gas Pipeline Co. of America	North Shore Gas Co	05-06-87	B		
ST87-2517	Tennessee Gas Pipeline Co	Central Hudson Gas and Electric Co.	05-06-87	B		
ST87-2518	Tennessee Gas Pipeline Co	Berkshire Gas Co	05-06-87	B		
ST87-2519	Tennessee Gas Pipeline Co	Colonial Gas Company	05-06-87	B		
ST87-2520	Tennessee Gas Pipeline Co	City of Holyoke Gas and Electric Dept.	05-06-87	B		
ST87-2521	Tennessee Gas Pipeline Co	Energy North, Inc	05-06-87	B		
ST87-2522	Williams Natural Gas Co	Llano, Inc	05-07-87	B		
ST87-2523	Arkla Energy Resources	North Penn Gas Co	05-07-87	B		
ST87-2524	Arkla Energy Resources	Union Light, Heat & Power Comm	05-07-87	B		
ST87-2525	Arkla Energy Resources	Arkansas Louisiana Gas Co	05-07-87	B		
ST87-2526	Trunkline Gas Co	Consumers Power Co	05-07-87	B		
ST87-2527	Trunkline Gas Co	Consumers Power Co	05-07-87	B		
ST87-2528	Valero Transmission Co	Valero Interstate Transmission Co	05-07-87	C		

Docket No.[1]	Transporter/seller	Recipient	Date filed	Subpart	Expiration date [2]	Transportation rate (¢/MMBTU)
ST87-2529	Lawrenceburg Gas Transmission Corp.	Lawrenceburg Gas Co	05-07-87	B		
ST87-2530	ANR Pipeline Co	Columbia Gas of Virginia, Inc	05-08-87	B		
ST87-2531	ANR Pipeline Co	Wisconsin Public Service Co	05-08-87	B		
ST87-2532	ANR Pipeline Co	Michigan Consolidated Gas Co	05-08-87	B		
ST87-2533	Williams Natural Gas Co	Taft Pipeline Co	05-08-87	B		
ST87-2534	Williams Natural Gas Co	Missouri Public Service Co	05-08-87	B		
ST87-2535	El Paso Natural Gas Co	Southern California Gas Co	05-08-87	B		
ST87-2536	El Paso Natural Gas Co	Intersearch Gas Corp	05-08-87	B		
ST87-2537	El Paso Natural Gas Co	Southern California Gas Co	05-08-87	B		
ST87-2538	ANR Pipeline Co	Columbia Gas of Kentucky, Inc	05-08-87	B		
ST87-2539	ANR Pipeline Co	Atlanta Gas Light Co	05-08-87	B		
ST87-2540	ANR Pipeline Co	Northern Indiana Fuel & Light Co	05-08-87	B		
ST87-2541	ANR Pipeline Co	Columbia Gas of New York, Inc	05-08-87	B		
ST87-2542	ANR Pipeline Co	Wisconsin Public Service Co	05-08-87	B		
ST87-2543	ANR Pipeline Co	Southeastern Michigan Gas Co	05-08-87	B		
ST87-2544	ANR Pipeline Co	Michigan Gas Utilities	05-08-87	B		
ST87-2545	ANR Pipeline Co	Michigan Consolidated Gas Co	05-08-87	B		
ST87-2546	ANR Pipeline Co	Michigan Consolidated Gas Co	05-08-87	B		
ST87-2547	ANR Pipeline Co	Michigan Consolidated Gas Co	05-08-87	B		
ST87-2548	ANR Pipeline Co	Southeastern Michigan Gas Co	05-08-87	B		
ST87-2549	Northern Natural Gas Co	Northern States Power Co	05-07-87	B		
ST87-2550	Northern Natural Gas Co	Prairie Gas Transportation Co	05-07-87	B		
ST87-2551	Northern Natural Gas Co	Enron Industrial Natural Gas Co	05-07-87	B		
ST87-2552	Consolidated Gas Transmission Corp.	Connecticut Natural Gas Corp	05-07-87	B		
ST87-2553	Consolidated Gas Transmission Corp.	Hope Gas, Inc	05-07-87	B		
ST87-2554	Consolidated Gas Transmission Corp.	Hope Gas, Inc	05-07-87	B		
ST87-2555	Consolidated Gas Transmission Corp.	East Ohio Gas Co	05-07-87	B		
ST87-2556	Consolidated Gas Transmission Corp.	South Jersey Gas Co	05-07-87	B		
ST87-2557	Consolidated Gas Transmission Corp.	Hope Gas, Inc	05-07-87	B		
ST87-2558	Tennessee Gas Pipeline Co	Creole Gas Pipeline Corp	05-07-87	B		
ST87-2559	Tennessee Gas Pipeline Co	Western Kentucky Gas Corp., et al	05-07-87	B		
ST87-2560	Tennessee Gas Pipeline Co	Wisconsin Pub. Serv. Corp., et al	05-07-87	B		
ST87-2561	Tennessee Gas Pipeline Co	Berkshire Gas Co	05-07-87	B		
ST87-2562	Tennessee Gas Pipeline Co	Cameron Gas Company	05-07-87	B		
ST87-2563	Valero Transmission Co	El Paso Natural Gas Co	05-08-87	C		
ST87-2564	Natural Gas Pipeline Co. of America	Peoples Gas Light & Coke Co	05-08-87	B		
ST87-2565	Natural Gas Pipeline Co. of America	Iowa-Illinois Gas & Electric Co	05-08-87	B		
ST87-2566	Natural Gas Pipeline Co. of America	Northern Illinois Gas Co	05-11-87	B		
ST87-2567	Natural Gas Pipeline Co. of America	North Shore Gas Co	05-11-87	B		
ST87-2568	Columbia Gulf Transmission Co	Monterey Pipeline Co	05-11-87	B		
ST87-2569	Mid Louisiana Gas Co	Town of Vidalia	05-11-87	B		
ST87-2570	Channel Industries Gas Co	THC Pipeline Co	05-11-87	C		
ST87-2571	Channel Industries Gas Co	Natural Gas Pipeline Co. of America	05-11-87	C		
ST87-2572	Tennessee Gas Pipeline Co	New York State Elect. & Gas Co., et al.	05-11-87	B		
ST87-2573	Transcontinental Gas Pipe Line Corp.	Northern Intrastate Pipeline Co	05-11-87	B		
ST87-2574	Transcontinental Gas Pipe Line Corp.	Channel Industries Gas Co	05-11-87	B		
ST87-2575	Transcontinental Gas Pipe Line Corp.	Northern Indiana Pub. Serv. Co., et al.	05-11-87	B		
ST87-2576	Colorado Interstate Gas Co	Ohio Gas Co., et al	05-11-87	B		
ST87-2577	Williams Natural Gas Co	KPL Gas Service Co	05-11-87	B		
ST87-2578	Williams Natural Gas Co	Board of Public Util. of Springfield	05-11-87	B		
ST87-2579	Tennessee Gas Pipeline Co	Commonwealth Gas Co	05-12-87	B		
ST87-2580	Tennessee Gas Pipeline Co	Connecticut Light & Power Co	05-12-87	B		
ST87-2581	Tennessee Gas Pipeline Co	Teco Pipeline Company	05-12-87	B		
ST87-2582	Arkla Energy Resources	Associated Natural Gas Co	05-12-87	B		
ST87-2583	Arkla Energy Resources	South Jersey Gas Co	05-12-87	B		
ST87-2584	Natural Gas Pipeline Co. of America	Northern Illinois Gas Co	05-13-87	B		
ST87-2585	Tennessee Gas Pipeline Co	Bay State Gas Co	05-13-87	B		
ST87-2586	Lear Gas Transmission Co	Southern Natural Gas Co	05-13-87	C	10-10-87	23.00
ST87-2587	Lear Gas Transmission Co	Williams Natural Gas Co	05-13-87	C	10-10-87	28.00
ST87-2588	Arkla Energy Resources	Consumers Gas Co	05-14-87	B		

Docket No.[1]	Transporter/seller	Recipient	Date filed	Subpart	Expiration date[2]	Transportation rate (¢/MMBTU)
ST87-2589	Transcontinental Gas Pipe Line Corp.	Pennsylvania Gas and Water Co	05-14-87	B		
ST87-2590	Transcontinental Gas Pipe Line Corp.	Philadelphia Gas Works	05-14-87	B		
ST87-2591	Arkla Energy Resources	Mointaineer Gas Co	05-14-87	B		
ST87-2592	Tennessee Gas Pipeline Co	Bay State Gas Co	05-14-87	B		
ST87-2593	Tennessee Gas Pipeline Co	Niagara Mohawk Power Corp., et al	05-14-87	B		
ST87-2594	Transcontinental Gas Pipe Line Corp.	Orange and Rockland Utilities, Inc	05-14-87	B		
ST87-2595	Transcontinental Gas Pipe Line Corp.	Washington Gas Light Co	05-14-87	B		
ST87-2596	Transcontinental Gas Pipe Line Corp.	Mississippi Fuel Co	05-14-87	B		
ST87-2597	Transcontinental Gas Pipe Line Corp.	Union Gas Co	05-14-87	B		
ST87-2598	Transcontinental Gas Pipe Line Corp.	Pennsylvania Gas and Water Co	05-14-87	B		
ST87-2599	Transcontinental Gas Pipe Line Corp.	Virginia Natural Gas Co	05-14-87	B		
ST87-2600	Transcontinental Gas Pipe Line Corp.	Tennessee River Intra. Gas Co., et al.	05-14-87	B		
ST87-2601	Transcontinental Gas Pipe Line Corp.	South Jersey Gas Co	05-14-87	B		
ST87-2602	Transcontinental Gas Pipe Line Corp.	Public Service Electric and Gas Co	05-14-87	B		
ST87-2603	Colorado Interstate Gas Co	Humble Gas Transmission Co	05-14-87	B		
ST87-2604	Colorado Interstate Gas Co	Public Service Co. of Colorado	05-14-87	B		
ST87-2605	Tennessee Gas Pipeline Co	Niagara Mohawk Power Corp	05-14-87	B		
ST87-2606	Texas Eastern Transmission Corp	Mountainer Gas Co	05-15-87	B		
ST87-2607	Natural Gas Pipeline Co. of America	Northern Illinois Gas Co	05-15-87	B		
ST87-2608	Natural Gas Pipeline Co. of America	City of Salen	05-15-87	B		
ST87-2609	Natural Gas Pipeline Co. of America	Midwest Gas Co	05-15-87	B		
ST87-2610	Northern Natural Gas Co	Great Plains Natural Gas Co	05-15-87	B		
ST87-2611	Northern Natural Gas Co	Iowa-Illinois Gas & Electric Co	05-15-87	B		
ST87-2612	Arkla Energy Resources	Peoples Natural Gas Co	05-15-87	B		
ST87-2613	Columbia Gulf Transmission Co	East Ohio Oil Co., et al	05-15-87	B		
ST87-2614	Texas Eastern Transmission Corp	Allied Gas Co	05-15-87	B		
ST87-2615	Texas Eastern Transmission Corp	Columbia Gas of Ohio, Inc	05-15-87	B		
ST87-2616	Texas Eastern Transmission Corp	Monterey Pipeline Co	05-15-87	B		
ST87-2617	Northwest Pipeline Corp	Southwest Gas Corp	05-18-87	B		
ST87-2618	Transwestern Pipeline Co	GGSI Gas Co	05-18-87	B		
ST87-2619	Transwestern Pipeline Co	Southern California Gas Co	05-18-87	B		
ST87-2620	Columbia Gulf Transmission Co	East Ohio Gas Co., et al	05-18-87	B		
ST87-2621	Williams Natural Gas Co	Union Gas System, Inc	05-18-87	B		
ST87-2622	Williams Natural Gas Co	Louisiana Gas Marketing Co	05-18-87	B		
ST87-2623	Tennessee Gas Pipeline Co	Southern Connecticut Gas Co	05-18-87	B		
ST87-2624	Tennessee Gas Pipeline Co	Valley Gas Co	05-18-87	B		
ST87-2625	Tennessee Gas Pipeline Co	Tennesse River Intra. Gas Co., et al	05-18-87	B		
ST87-2626	Tennessee Gas Pipeline Co	Consolidated Edison Co. of NY, Inc	05-18-87	B		
ST87-2627	Texas Gas Transmission Corp	Louisville Gas & Electric Co	05-19-87	B		
ST87-2628	Texas Gas Transmission Corp	Morgan City	05-19-87	B		
ST87-2629	Texas Gas Transmission Corp	Baltimore Gas & Elect. Co., et al	05-19-87	B		
ST87-2630	Colorado Interstate Gas Co	Peoples Natural Gas Co	05-19-87	B		
ST87-2631	Colorado Interstate Gas Co	Central Illinois Light Co., et al	05-19-87	B		
ST87-2632	Natural Gas Pipeline Co. of America	Eastex Gas Transmission Co	05-19-87	B		
ST87-2633	Natural Gas Pipeline Co. of America	Peoples Gas Light & Coke Co., et al.	05-19-87	B		
ST87-2634	Williams Natural Gas Co	Union Gas System, Inc	05-20-87	B		
ST87-2635	Williams Natural Gas Co	Kansas Gas Supply Corp	05-20-87	B		
ST87-2636	Tennessee Gas Pipeline Co	Atlanta Gas Light Co	05-20-87	B		
ST87-2637	Tennessee Gas Pipeline Co	Southern Connecticut Gas Co	05-20-87	B		
ST87-2638	Tennessee Gas Pipeline Co	Pennsylvania Gas and Water Co	05-20-87	B		
ST87-2639	Tennessee Gas Pipeline Co	Pennsylvania Gas and Water Co	05-20-87	B		
ST87-2640	Tennessee Gas Pipeline Co	Connecticut Natural Gas Corp	05-20-87	B		
ST87-2641	United Gas Pipe Line Co	Mobile Gas Service Corp	05-20-87	B		
ST87-2642	United Gas Pipe Line Co	Callman-Jefferson Gas District	05-20-87	B		
ST87-2643	United Gas Pipe Line Co	Gulf South Pipeline Co	05-20-87	B		
ST87-2644	United Gas Pipe Line Co	Gulf South Pipeline Co	05-20-87	B		
ST87-2645	Louisiana-Nevada Transit Co	Sabine-Desoto Pipeline Co., Inc	05-20-87	B		
ST87-2646	Natural Gas Pipeline Co. of America	Bridgeline Gas Dist. Co., et al	05-21-87	B		
ST87-2647	Natural Gas Pipeline Co. of America	Hayes Albion Pipeline Co	05-21-87	B		

Docket No.[1]	Transporter/seller	Recipient	Date filed	Subpart	Expiration date [2]	Transportation rate (¢/MMBTU)
ST87-2648	Trunkline Gas Co	Amoco Gas Co	05-21-87	B		
ST87-2649	Tennessee Gas Pipeline Co	Illinois Power Co., et al	05-1-87	B		
ST87-2650	Tennessee Gas Pipeline Co	Berkshire Gas Co., et al	05-21-87	B		
ST87-2651	Tennessee Gas Pipeline Co	Commonwealth Gas Co	05-21-87	B		
ST87-2652	Tennessee Gas Pipeline Co	Iowa-Illinois Gas & Elect. Co., et al	05-21-87	B		
ST87-2653	ANR Pipeline Co	Wisconsin Public Service Co	05-22-87	B		
ST87-2654	ANR Pipeline Co	Wisconsin Public Service Co	05-22-87	B		
ST87-2655	ANR Pipeline Co	Lincoln Natural Gas Co	05-22-87	B		
ST87-2656	ANR Pipeline Co	Wisconsin Natural Gas Co	05-22-87	B		
ST87-2657	ANR Pipeline Co	Northern Indiana Public Service Co	05-22-87	B		
ST87-2658	Colorado Interstate Gas Co	Southern California Gas Co	05-22-87	B		
ST87-2659	ANR Pipeline Co	Wisconsin Public Service Co	05-22-87	B		
ST87-2660	ANR Pipeline Co	Michigan Consolidated Gas Co	05-22-87	B		
ST87-2661	ANR Pipeline Co	Wisconsin Public Service Co	05-22-87	B		
ST87-2662	ANR Pipeline Co	Wisconsin Gas Co	05-22-87	B		
ST87-2663	Engex Inc		05-22-87	C	10-19-87	28.50
ST87-2664	El Paso Natural Gas Co	TPC Pipeline, Inc	05-22-87	B		
ST87-2665	Williams Natural Gas Co	Miami Pipeline Co	05-22-87	B		
ST87-2666	Williams Natural Gas Co	KPL Gas Service Co	05-22-87	B		
ST87-2667	Washington Gas Light Co	City of Washington, D.C.	05-22-87	G(HT)	10-19-87	18.90
ST87-2668	Channel Industries Gas Co	Texas Eastern Transmission Corp	05-22-87	C		
ST87-2669	Channel Industries Gas Co	United Gas Pipe Line Co	05-22-87	C		
ST87-2670	Channel Industries Gas Co	Natural Gas Pipeline Co of America	05-22-87	C		
ST87-2671	Channel Industries Gas Co	Tennessee Gas Pipeline Co	05-22-87	C		
ST87-2672	Tennessee Gas Pipeline Co	Quivira Gas Co	05-22-87	B		
ST87-2673	Ong Transmission Co	Northern Natural Gas Co	05-22-87	C		
ST87-2674	United Gas Pipe Line Co	Madleon Transmission Co., Inc	05-26-87	B		
ST87-2675	Columbia Gulf Transmission Co	People's Gas Light & Coke Co., Et Al.	05-26-87	B		
ST87-2676	Williams Natural Gas Co	KPL Gas Service Co	05-26-87	B		
ST87-2677	Williams Natural Gas Co	Olympic Pipeline Co	05-26-87	B		
ST87-2678	United Gas Pipe Line Co	Public Service Electric and Gas Co	05-26-87	B		
ST87-2679	United Gas Pipe Line Co	United Cities Gas Co., Et Al	05-26-87	B		
ST87-2680	Natural Gas Pipeline Co. of America	Northern Illinois Gas Co	05-26-87	B		
ST87-2681	United Gas Pipe Line Co	Consolidated Edison of NY, Inc., Et Al.	05-26-87	B		
ST87-2682	Natural Gas Pipeline Co. of America	North Shore Gas Co	05-26-87	B		
ST87-2683	Natural Gas Pipeline Co. of America	Northern Indiana Public Service Co	05-26-87	B		
ST87-2684	Natural Gas Pipeline Co. of America	Northern Indiana Public Service Co	05-26-87	B		
ST87-2685	Natural Gas Pipeline Co. of America	Peoples Gas Light & Coke Co	05-26-87	B		
ST87-2686	El Paso Natural Gas Co	Southern California Gas Co	05-26-87	B		
ST87-2687	El Paso Natural Gas Co	Southern California Gas Co	05-26-87	B		
ST87-2688	El Paso Natural Gas Co	Sunshine Energy Co	05-26-87	B		
ST87-2689	Channel Industries Gas Co	Tennessee Gas Pipeline Co	05-27-87	c		
ST87-2690	Channel Industries Gas Co	Texas Eastern Transmission Corp	05-27-87	C		
ST87-2691	Texas Gas Transmission Corp	Western Kentucky Gas Co	05-27-87	B		
ST87-2692	Texas Gas Transmission Corp	CSX Intrastate Gas Co	05-27-87	B		
ST87-2693	Texas Gas Transmission Corp	Indiana Natural Gas Corp	05-27-87	B		
ST87-2694	Texas Gas Transmission Corp	Lousiville Gas & Electric Co	05-27-87	B		
ST87-2695	Texas Gas Transmission Corp	Western Kentucky Gas Co	05-27-87	B		
ST87-2696	Texas Gas Transmission Corp	Louisville Gas & Electric Co	05-27-87	B		
ST87-2697	Texas Gas Transmission Corp	Northern Illinois Gas Co	05-27-87	B		
ST87-2698	El Paso Natural Gas Co	El Paso Hydrocarbons Co	05-27-87	B		
ST87-2699	El Paso Natural Gas Co	Pacific Gas and Electric Co	05-27-87	B		
ST87-2700	Panhandle Eastern Pipe Line Co	Michigan Consolidated Gas Co	05-27-87	B		
ST87-2701	Panhandle Eastern Pipe Line Co	Consumers Power Co	05-27-87	B		
ST87-2702	Trunkline Gas Co	Consumers Power Co	05-27-87	B		
ST87-2703	Williams Natural Gas Co	Yankee Pipeline Co	05-27-87	B		
ST87-2704	Transok, Inc	Phillips Gas Pipeline Co	05-27-87	C	10-24-87	21.75
ST87-2705	Tennessee Gas Pipline Co	Houston Pipe Line Co	05-27-87	B		
ST87-2706	Tennessee Gas Pipline Co	Northern Illinois Gas Co., Et Al	05-27-87	B		
ST87-2707	Tennessee Gas Pipline Co	Pontchartrain Natrural Gas System	05-27-87	B		
ST87-2708	Delhi Gas Pipeline Corp	El Paso Natural Gas Co	05-28-87	C		
ST87-2709	Red River Pipeline	El Paso Natural Gas Co	05-29-87	C	10-26-87	36.00
ST87-2710	Louisiana Intrastate Gas Corp	Florida Gas Transmission Co	05-28-87	C	10-25-87	10.00
ST87-2711	Louisiana Intrastate Gas Corp	Southern Natural Gas Co	05-28-87	C	10-25-87	22.40
ST87-2712	Ong Transmission Co	National Gas Pipeline Co. of America	05-28-87	C	10-25-87	10.00
ST87-2713	Tennessee Gas Pipeline Co	Consolidated Edison Co. of NY, Inc	05-28-87	B		
ST87-2714	United Gas Pipe Line Co	Eastex Gas Transmission Co	05-28-87	B		
ST87-2715	United Gas Pipe Line Co	Eastex Gas Transmission Co	05-28-87	B		

Docket No.[1]	Transporter/seller	Recipient	Date filed	Subpart	Expiration date[2]	Transportation rate (¢/MMBTU)
ST87-2716	United Gas Pipe Line Co	Bishop Pipeline Corp	05-28-87	B		
ST87-2717	United Gas Pipe Line Co	Berkshire Gas Co., Et Al	05-28-87	B		
ST87-2718	Northern Natural Gas Co	Intratex Gas Co	05-28-87	B		
ST87-2719	Trunkline Gas Co	Consumers Power Co	05-28-87	B		
ST87-2720	Panhandle Eastern Pipe Line Co	Richmond Gas Corp	05-28-87	B		
ST87-2721	Panhandle Eastern Pipe Line Co	Northern Indiana Public Services Co	05-28-87	B		
ST87-2722	Natural Gas Pipe Line Co. of America	Iowa-Illinois Gas & Electric Co	05-28-87	B		
ST87-2723	United Gas Pipe Line Co	Delta Gas, Inc	05-29-87	B		
ST87-2724	United Gas Pipe Line Co	Louisiana State Gas Corp	05-29-87	B		
ST87-2725	United Gas Pipe Line Co	American Pipeline Co	05-29-87	B		
ST87-2726	United Gas Pipe Line Co	Louisiana State Gas Corp	05-29-87	B		
ST87-2727	El Paso Natural Gas Co	Sunshine Energy Co	05-29-87	B		
ST87-2728	El Paso Natural Gas Co	Southwest Gas Corp	05-29-87	B		
ST87-2729	El Paso Natural Gas Co	Southern California Gas Co	05-29-87	B		
ST87-2730	Panhandle Eastern Pipe Line Co	Kokomo Gas and Fuel Co	05-29-87	B		
ST87-2731	Panhandle Eastern Pipe Line Co	Northern Indiana Fuel & Light Co., Inc.	05-29-87	B		
ST87-2732	Panhandle Eastern Pipe Line Co	Ohio Valley Gas Corp	05-29-87	B		
ST87-2733	Panhandle Eastern Pipe Line Co	Central Illinois Public Service Co	05-29-87	B		
ST87-2734	Panhandle Eastern Pipe Line Co	Village of Riverton	05-29-87	B		
ST87-2735	Trunkline Gas Co	Northern Illinois Gas Co	05-29-87	B		
ST87-2736	Arkla Energy Resources	Hope Gas, Inc	05-29-87	B		
ST87-2737	Arkla Energy Resources	Baltimore Gas and Electric Co	05-29-87	B		
ST87-2738	Perry Pipeline Co	Southwest Gas Corp	05-29-87	D		

[1] Notice of transactions does not constitute a determination that filings comly with Commission regulations in accordance with Order No. 43 (Final Rule and Notice Requesting Supplemental Comments, 50 FR 42,372, 10/18/85).

[2] The Intrastate Pipeline has sought Commission approval of its transportation rate pursuant to § 284.123(B)(2) of the Commission's regulations (18 CFR 284.123(B)(2)). Such rates are deemed fair and equitable if the Commission does not take action by the date indicated

[FR Doc. 87-16165 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. RP87-52-008]

United Gas Pipe Line Co.; Compliance Filing

July 10, 1987.

Take notice that on July 6, 1987, United Gas Pipe Line Company (United) tendered for filing Revised Seventy-Seventh Revised Sheet No. 4 (Page 2 of 2), Revised Sixteenth Revised Sheet No. 6 and Revised Tenth Revised Sheet No. 22 to its FERC Gas Tariff, First Revised Volume No. 1 to comply with Ordering Paragraph (B)(2) of the Commission's April 30, 1987 Order in Docket No. RP87-52-000. These tariff sheets reflect reclassification of take-or-pay settlement costs to the commodity component.

United has mailed copies of this filing to its customers, affected state commissions and all parties on the official service list.

Any person desiring to be heard or to protest said filing should file a motion to intervene or a protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, D.C. 20426, in accordance with Rules 214 and 211 of the Commission's Rules of Practice and Procedure. All such motions or protests should be filed on or before July 17, 1987. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

[FR Doc. 87-16164 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. ER87-523-000]

UtiliCorp United Inc., d/b/a Missouri Public Service; Filing

July 9, 1987

Take notice that on July 2, 1987, UtiliCorp United Inc., d/b/a Missouri Public Service (MPS) and the City of Independence, Missouri, tendered for filing Supplemental Agreement No. 1 to Municipal Participation Agreement (MPA) dated April 15, 1987, for proposed changes in its Federal Energy Regulatory Commission Electric Service Tariff No. 26.

Supplemental Agreement No. 1 to MPA provides for interconnection of the parties' respective transmission facilities and for the use of such interconnections to provide transmission service to each other for the purpose of avoiding duplication of transmission facilities and to allow for more efficient and economic operation.

MPS requests waiver of the Commission's notice requirements to permit the Agreement to become effective on April 22, 1987, which is the effective date of the Supplemental Agreement No. 1.

Copies of the filing were served upon the Missouri Public Service Commission.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All such motions or protests should be filed on or before July 23, 1987. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

[FR Doc. 87-16162 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. ER87-520-000]

Vermont Yankee Nuclear Power Corp.;

Filing July 9, 1987.

Take notice that on July 2, 1987, Vermont Yankee Nuclear Power Corporation (Vermont Yankee) filed a revised schedule of decommissioning collections that effectuates as of July 1, 1987, the terms of an Offer of Settlement approved by the Commission on September 18, 1985.

Vermont Yankee states that the compliance filing revises the schedule of decommissioning collections to reflect the reduction in the Federal corporate income tax rate effective July 1, 1987, and the limitation on net operating loss carrybacks enacted by the Vermont legislature.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). All such motions or protets should be filed on or before July 23, 1987. Protests will be considered by the Commission's in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Kenneth F. Plumb,

Secretary.

[FR Doc. 87-16163 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

[Project No. 8133-004, et al.]

Hydroelectric Applications Filed With the Commission; B. S. Inc., et al.

Take notice that the following hydroelectric applications have been filed with the Federal Energy Regulatory Commission and are available for public inspection:

a. Type of Application: Major License (5MW or Less).

b. Project No: 8133-004.

c. Date Filed: December 15, 1986.

d. Applicant B.S. Inc.

e. Name of Project: East Fork Ditch Project.

f. Location: In Payette National Forest, on the East Fork Weiser River, in Adams County, Idaho. Township 17N and Range 1E.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

h. Applicant Contact: Mr. Carl L. Myers, Myers Engineering Company, P.A., 750 Warm Springs Avenue, Boise, ID 83712, (208) 336-1425.

i. FERC Contact: Thomas A. Dean, (202) 376-9275.

j. Comment Date: September 3, 1987.

k. Description of Project: The proposed run-of-river project would consist of: (1) A 20-foot-long, 3.5-foot-high reinforced concrete diversion dam with a crest elevation of 4,776.5 feet msl; (2) the 4.2-mile-long East Fork Ditch; (3) an intake structure located at Shingle Flat; (4) a 30-inch-diameter, 10,000-foot-long steel penstock leading to; (5) a 25-foot by 35-foot concrete powerhouse containing a single 5,000 kW generating unit; (6) a tailrace; and (7) a 1,900-foot-long, 12.5-kV transmission line. The applicant estimates the average annual energy production to be 13,337 MWh. The estimated installed cost of the project is $4,750,000.

l. Purpose of Project: Applicant intends to sell the power generated at the proposed facility to Idaho Power Company.

m. This notice also consists of the following standard paragraphs: A3, A9, B, C, and D1.

a. Type of Application: Minor License.

b. Project No: 9876-001.

c. Date Filed: November 3, 1986.

d. Applicant: Clearwater Hydro Associates.

e. Name of Project: Village Creek Hydro Project.

f. Location: On Village Creek near Birmingham, Jefferson County, Alabama.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

h. Applicant Contact: Mr. Richard Gresham, Box 4, Chimney Rock Road, Rutherfordton, NC 28139, (704) 287-5674.

i. FERC Contact: Michael Dees—(202) 376-9830.

j. Comment Date: September 8, 1987.

k. Description of Project: The proposed project would consist of: (1) An existing gravity dam 550 feet long and 115 feet high; (2) an existing 440 acre reservoir; (3) a proposed intake structure and a penstock six feet in diameter; (4) a proposed reinforced concrete powerhouse 24 feet by 24 feet by 30 feet high housing, a 1,100-kW hydropower unit; (5) a proposed 12.47-kV three-phase transmission line 1.3 miles long; and (6) appurtenant facilities. The applicant estimates that the average annual energy generation would be 5.8 GWh, and proposes to sell the energy to Alabama Power Light Company. The dam is owned by USX Corporation.

l. This notice also consists of the following standard paragraphs: A3, A9, B, C, and D1.

3 a. Type of Application: Preliminary Permit.

b. Project No.: 10342-001.

c. Date Filed: March 10, 1987.

d. Applicant: City of Tacoma.

e. Name of Project: North Fork Payette River.

f. Location: On the North Fork of the Payette River in Boise, Valley, and Gem Counties, Idaho. T7N, r1W, T7N, R1E, T8N, R1E, T9N, R1E, T9N, R2E, T9N, R3E, T10N, R3E, and T11N, R3E.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

h. Applicant Contact: Mr. E. E. Coates, City of Tacoma, Department of Public Utilities, P.O. Box 11007, Tacoma, WA 98411, (206) 383-2471.

i. FERC Contact: Mr. William Roy-Harrison, (202) 376-9773.

j. Comment Date: August 14, 1987.

k. Competing Application: Project No. 10396-000, Date Filed: April 24, 1987.

l. Description of Project: The proposed project would consist of an upper and lower development.

The upper development would consist of: (1) A 30-foot-high, 155-foot-long diversion structure at elevation 4,443 feet msl; (2) a 16-foot-diameter, 38,700-foot-long power tunnel; (3) a 12-foot-diameter, 3,650-foot-long penstock; (4) a powerhouse containing a generating unit with a rated capacity of 174 MW; (5) a tailrace tunnel discharging into the North Fork Payette River; and (6) a 230-kV, 10-mile long transmission line tying into the switchyard of the lower development.

The lower development would consist of: (1) A 30-foot-high, 155-foot-long diversion structure at elevation 3,415 feet msl; (2) a 16-foot-diameter, 22,034-foot-long power tunnel; (3) a 12-foot-diameter, 435-foot-long penstock; (4) a powerhouse containing a generating unit with a rated capacity of 99 MW; (5) a tailrace tunnel discharging into the North Fork Payette River; and (6) a 230-kV, 21-mile long transmission line tying into the existing Idaho Power Company system.

The applicant estimates an average annual energy production of 1,234 GWh with a total rated capacity of 273 MW.

m. Purpose of Project: Power would be used by the applicant.

n. This notice also consists of the following standard paragraphs: A5, A7, A9, A10, B, C, and D2.

4 a. Type of Application: Preliminary Permit.

b. Project No: 10357-000.

c. Date Filed: March 23, 1987.

d. Applicant: Thorne Ferguson Sr. & Associates.

e. Name of Project: Reynolds Creek.

f. Location: On Lake Mellen where it flows into Reynolds Creek in T775, R84E, Copper River Meridian near Hydaburg, Alaska.

g. Filed Pursuant to: Federal Power Act 16 US.C. 791(a) through 825(r).

h. Applicant Contact: Mr. Thorne W. Ferguson, Sr., 1200 E. 76th Avenue, Suite 1222, Anchorage, AK 99502, (907) 349-6485.

i. FERC Contact: Julie Bernt, (202) 376-9812.

j. Comment Date: September 8, 1987.

k. Description of Project: The proposed run-of-the-river project would consist of: (1) A siphon intake in Lake Mellen; (2) Lake Mellen with a water surface elevation of 873 feet and a surface area of 168 acres providing approximately 800-acre-feet of active storage with a drawdown of 5 feet; (3) a 5,300-foot-long, 16-inch-diameter penstock; and (4) a powerhouse containing one generating unit with a rated capacity of 500 KW. Applicant estimates that the average annual energy production would be 4 GWh and the cost of the work to be performed under the preliminary permit would be $20,000.

l. Purpose of Project: The power produced will be used by the applicant for a lodge, fish farm, and other industrial activities.

m. This notice also consists of the following standard paragraphs: A5, A7, A9, A10, B, C and D2.

5 a. Type of Application: Preliminary Permit.

b. Project No: 10405-000.

c. Date Filed: May 1, 1987.

d. Applicant: Craig W. Scott.

e. Name of Project: South Fork Water Power Project.

f. Location: On Memaloose Creek and the South Fork of the Clackamas River within the Mt. Hood National Forest in T4S, R5S, near Estacada in Clackamas County, Oregon.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

h. Applicant Contact: Mr. Craig W. Scott, 17168 S. Holly Lane, Oregon City, OR 97045, (503) 657-9042.

i. FERC Contact: Julie Bernt, (202) 376-9812.

j. Comment Date: September 3, 1987.

k. Description of Project: The proposed run-of-the-river project would consist of: (1) An existing 3-foot-high concrete diversion structure at elevation 1,040 feet on the South Fork Clackamas River and a proposed 3-foot-high concrete diversion at elevation 1,040 feet on Memaloose Creek; (2) a 1,600-foot-long, 24-inch-diameter penstock; (3) a powerhouse containing two generating units with a total rated capacity of 600 kW; and (4) a 750-foot-long transmission line. Applicant estimates the average annual energy production to be 4 MWh and the estimated cost of the work to be performed under the preliminary permit to be $10,000.

l. Purpose of Project: The power produced is to be sold to a local power company.

m. This notice also consists of the following standard paragraphs: A5, A7, A9, A10, B, C, and D2.

6 a. Type of Application: Preliminary Permit.

b. Project No.: 10406-000.

c. Date Filed: May 6, 1987.

d. Applicant: Craig W. Scott.

e. Name of Project: Cripple Creek.

f. Location: On Cripple Creek and the South Fork of the Clackamas River within the Mt. Hood National Forest in T5S, R6E, near Estacada in Clackamas County, Oregon.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a)—825(r).

h. Applicant Contact: Mr. Craig W. Scott, 17168 S. Holly Lane, Oregon City, OR 97045, (503) 657-9042.

i. FERC Contact: Julie Bernt, (202) 376-9812.

j. Comment Date: September 3, 1987.

k. Description of Project: The proposed run-of-the-river project would consist of: (1) Three concrete intake structures, one at elevation 4,100 feet on Cripple Creek (Diversion B) and two at elevation 2,050 feet on the South Fork Clackamas River and on Cripple Creek (Diversions A1 and A2); (2) a 13,000-foot-long, 24-inch-diameter penstock from diversion B; a 2,000-foot-long, 24-inch-diameter penstock from diversion A1, and a 2,200-foot-long, 24-inch-diameter penstock from diversion A2, all three of which would join to form a 900-foot-long, 24-inch-diameter penstock; (3) a powerhouse at elevation 1,600 feet containing three generating units with a total rated capacity of 3,800 kW; and (4) a 300-foot-long underground transmission line.

Applicant estimates the average annual energy production to be 13 GWh and the cost of the work to be performed under the preliminary permit to be $10,000.

l. Purpose of Project: The power produced is to be sold to the local power company.

m. This notice also consists of the following standard paragraphs: A5, A7, A9, A10, B, C and D2.

7 a. Type of Application: Declaration of Intention.

b. Project No.: EL87-42.

c. Date Filed: June 1, 1987.

d. Applicant: City of Charleston, IL.

e. Name of Project: Lake Charleston (Lower) Water Power Project.

f. Location: On the Embarrass River, Coles County, Illinois.

g. Filed Pursuant to: Section 23(b) of the Federal Power Act, 16 U.S.C. 817(b).

h. Contact Person:

Mr. Terrence L. Turner, W.M. Lewis & Associates, Inc., P.O. Box 1383, 740 Fifth Street, Portsmouth, OH 45662

The Honorable Murray Choate, Mayor, Municipal Building, 520 Jackson Street, Charleston, IL 61920

i. Comment Date: August 10, 1987.

j. Description of Project: The proposed run-of-river project would consist of: (1) An existing earthfill structure 400 feet long and 32 feet high with a crest elevation of 580.6 feet, owned by the applicant; (2) a proposed powerhouse using two identical "tube"—type turbines, each rated at 495 horsepower at 19 feet of head with an installed capacity of 700 kW; and (3) appurtenant facilities.

When a Declaration of Intention is filed with the Federal Energy Regulatory Commission, the Federal Power Act requires the Commission to investigate and determine if the interests of interstate or foreign commerce would be affected by the project. The Commission also determines whether or not the project: (1) Would be located on a navigable waterway; (2) would occupy or affect public lands or reservations of the United States; (3) would utilize surplus water or water power from a government dam; or (4) if applicable, has involved or would involve any construction subsequent to 1935 that may have increased or would increase the project's head or generating capacity, or have otherwise significantly modified the project's pre-1935 design or operation.

k. Purpose of Project: All project power and energy will be sold to Central Illinois Public Service.

l. This notice also consists of the following standard paragraphs: B, C, and D2.

8 a. Type of Application: Transfer of License.

b. Project No: P-3011-003.

c. Date Filed: May 29, 1987.

d. Applicant: Arctic Development Corp. and Natco Products Corp.

e. Name of Project: Arctic Dam.

f. Location: On the South Branch of the Pawtuxet River at West Warwick in Kent County, Rhode Island.

g. Filed Pursuant to: Section 9 of the Federal Power Act 16 U.S.C. 791(a) through 825(r).

h. Contact Person: Mr. Robert T. Gallan, President, 33 Factory Street, West Warwick, RI 02893, (401) 274–0200.

i. FERC Contact: Cheryl Phillips, (202) 376–9821.

j. Comment Date: August 27, 1987.

k. Description of Project: On January 25, 1983, a minor license was issued to the Arctic Development Corporation for the Arctic Project No. 3011. Arctic Development Corporation intends to merge its interest in the project with Natco Products Corporation. For that reason, the Arctic Development and the Natco Products Corporation filed a request that the project license be transferred to the Natco Products Corporation.

1. This notice also consists of the following standard paragraphs. B & C.

9 a. Type of Application: Surrender of License.

b. Project No.: 7353–005.

c. Date Filed: May 12, 1987.

d. Applicant: Truckee—Donner Public Utility District.

e. Name of Project: Prosser Water Power Project.

f. Location: On Prosser Creek, in Nevada County, California.

Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

Applicant Contact: Peter L. Holzmeister, Truckee Donner Public Utility District, P.O. Box 309, 11570 Donner Pass Road, Truckee, CA 95734, (916) 587–3896.

i. FERC Contact: Ahman Mushtaq, (202) 376–1900.

j. Comment Date: August 24, 1987.

k. Description of the Proposed Surrender: The project would have utilized the existing Bureau of Reclamation's Prosser Dam, located on the Prosser Creek 3 miles upsteam from its confluence with the Truckee River, and would have consisted of: (1) A 76-fool-diameter steel liner in the existing outlet tunnel; (2) an extension of the existing outlet tunnel via an 8-foot-diameter, 40-feet-long steel pipe connected to a 72-inch Howell-Bunger valve; (3) a bifurcation in the extension with a 5-foot-diameter branch leading to a 70-foot-long penstock; (4) a powerhouse containing a single turbine-generator unit with a rated capacity of 1.1 MW operating under a head of 96 feet; (5) 0.48-kV generator leads; (6) a 0.48/12.5-kV step-up transformer; (7) a 12.5-kV, 1,800-foot-long transmission line interconnecting the project to the licensee's distribution system; and (8) appurtenant facilities.

The licensee states that a recent cost estimate indicated that the project is not feasible to construct at this time.

1. This notice also consists of the following standard paragraphs: B, C, and D2.

a. Type of Application: Surrender of License.

b. Project No: 8997–002.

c. Date Filed: June 8, 1987.

d. Applicant: Great Bear Hydropower, Inc.

e. Name of Project: Riegelsville.

f. Location: On the Musconetcong River in Pohatcong Township, Warrren County, New Jersey.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

h. Contact Person: Terence McDonnell, General Delivery, Trangoility, NJ 07879, (201) 852–4083.

i. FERC Contact: Thomas O. Murphy, (202) 376–9829.

j. Comment Date: August 24, 1987.

k. Description of Project: On April 24, 1986, a license was issued to construct, operate, and maintain the Riegelsville Project No. 8997. Licensee states that the project is no longer economically feasible.

1. Anyone desiring to be heard or to make any protest about this action should file a motion to intervene or a protest with the Federal Energy Regulatory Commission in accordance with the requirements of the Commission's Rules of Practice and Procedure, 18 CFR 385.211 or 385.214 (1985). Comments not in the nature of a protest may also be submitted by conforming to the procedures specified in section 385.211 for protests. To become a party, or to participate in any hearing that might be held, a person must file a motion to intervene in accordance with the Commission's Rules. The Commission's address is: 825 North Capitol Street, NE., Washington, DC 20426.

a. Type of Application: Exemption (5 MW or less).

b. Project No: 9611–001.

c. Date Filed: March 30, 1987.

d. Applicant: Saywatt Hydro Associates.

e. Name of Project: Mechanicsville Hydroelectric.

f. Location: On French River, near town of Thomson, in Windham County, Connecticut.

g. Filed Pursuant to: Energy Security Act of 1980, section 408, 16 U.S.C. 2705 and 2708.

h. Applicant Contact: Mr. George W. King, 170 Barretts Mill Rd., Concord, MA 01742, (617) 369–1136.

i. FERC Contact: Sat Goel, (202) 376–9816.

j. Comment Date: August 28, 1987.

k. Description of Project: The project would consist of: (1) An existing 20-foot-high, 200-foot-long dam presently owned by Essex Corporation having an agreement which gives the applicant the exclusive option to purchase; (2) an existing reservoir with 44-acre surface area and 256-acre-foot storage capacity; (3) a new 5-foot-diameter, 20-foot-long penstock; (4) an existing powerhouse containing a new 325-kW generating unit and; (5) a new 900-foot-long, 2.3-kV transmission line connecting to Northeast Utility Company. The estimated average energy produced bay the project would be 1,174,000 kWh.

1. Purpose of Exemption: An exemption, if issued, gives the exemptee priority of control, development and operation of the project under the terms of the exemption from licensing, and protects the exemptee from permit or license applicants that would seek to take or develop the project.

m. This notice also constists of the following standard paragraphs: A3, A9, B, C, and D3a.

12 a. Type of Application: Preliminary Permit.

b. Project No.: 10373–000.

c. Date Filed: March 13, 1987.

d. Applicant: Walter G. Sipple and George C. Sipple.

e. Name of Project: Mileses Generating Station.

f. Location: On Hankins Creek, near town of Fremont, in Sullivan County, New York.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

h. Applicant Contact: Walter G. Sipple, Box 13, Mileses, NY 12761, (914) 887–4746.

i. FERC Contact: Sat Goel, (202) 376–9816.

j. Comment Date: September 14, 1987.

k. Description of Project: The proposed project would consist of: (1) An existing 14-foot-high, 100-foot-long gravity dam owned by the applicant; (2) a new 24-inch-diameter, 248-foot-long penstock; (3) an existing 30-foot by 40-foot powerhouse containing a new generating unit with an installed capacity of 83 kW at head of 35 feet; and (4) a 100-foot-long, 4.8–kV transmission line connecting to an existing NYSEG transmission line.

The estimated average annual energy production is 4.6 million kWh. The project power would be sold to New York State Gas and Electric Company. The applicant estimates that the cost of the work to be performed under the preliminary permit would be $1,000.

l. This notice also consists of the following standard paragraphs: A5, A7, A9, A10, B, C and D2.

13 a. Type of Application: Preliminary Permit.

b. Project No.: 10426–000.

c. Date Filed: June 3, 1987.

d. Applicant: Corliss Avenue Corp.

e. Name of Project: Lower Greenwich.

f. Location: Battenkill River, Town of Greenwich, Washington County, New York.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r)

h. Applicant Contact: Mr. Lansford W. Perry, P.O. Box 2, 35 Barbourtown Road, Canton Center, CT 06020, (203) 693–8356.

i. FERC Contact: Mr. Steven H. Rossi, (202) 376–9819.

j. Comment Date: September 16, 1987.

k. Description of Project: The proposed project would consist of: (1) An existing 10-foot-high, 25-foot-long concrete gravity dam; (2) a reservoir with a surface area of 11 acres, no usable storage capacity, and a normal water surface elevation of 310.0 feet m.s.l.; (3) an existing canal system to be refurbished; and (4) an existing or new powerhouse located on the north river bank inside or adjacent to an existing mill complex containing new generating units with a total rated capacity of 750 kW; (5) a new transmission line, 2,000 feet long; and (6) appurtenant facilities. The applicant estimates the average annual generation would be 3,500,000 kWh. The existing dam is owned by Noroton Pulp and Paper Company, Greenwich, New York. The applicant estimates that the cost of the studies under permit would be $50,000.

l. Purpose of Project: Project power would be sold to Niagara Mohawk Power Corporation.

m. This notice also consists of the following standard paragraphs: A5, A7, A9, A10, B, C and D2.

14 a. Type of Application: Preliminary Permit.

b. Project No: 10427–000.

c. Date Filed: June 8, 1987.

d. Applicant: Bridgeport Hydraulic Co.

e. Name of Project: Aspetuck Tunnel.

f. Location: On the Saugatuck and Aspetuck Rivers in Fairfield County, Connecticut.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

h. Applicant Contact: Mr. Jack E. McGregor, President, Bridgeport Hydraulic Company, 835 Main Street, (203) 367–6621.

i. FERC Contact: Cheryl Phillips—(202) 376–9821.

j. Comment date: September 14, 1987.

k. Description of Project: The proposed project would consist of: (1) An existing 10-foot-high and 990-foot-long concrete gravity dam with an existing spillway at elevation 280 feet m.s.l.; (2) the Saugatuck Reservoirs an existing 868, acre surface area reservoir with a storage capacity of 42,000 acre-feet with a maximum surface elevation of 280 feet m.s.l.; (3) a second existing 64-foot-high and 700-foot-long concrete gravity dam; (4) the Hemlock Reservoir, an existing 437-acre surface area reservoir with a storage capacity of 11,700 acre-feet with a maximum surface elevation of 225 feet m.s.l.; (5) an existing tunnel and pipeline system which connects the Saugatuck Reservoir with the Aspetuck Reservoir which is 76-inches in diameter and 9,100 feet in length; (6) the Aspetuck Reservoir, an existing 61-acre surface area reservoir with a storage capacity of 200 acre–feet with a maximum surface elevation of 225 feet m.s.l.; (7) existing control gates which regulate the flow through the tunnel to; (8) a proposed powerhouse to contain one turbine/ generator unit with an installed capacity of 200 kW which discharges flows back into the river; (9) a proposed 13.8-kV transmission line either 200 feet long or 1,000 feet long; and (10) appurtenant facilities.

The estimated average annual energy produced by the project would be 1,000,000 kWh operating under a net hydraulic head of 41 feet. The existing project facilities are owned by the applicant. The applicant estimates that the cost of the work to be performed under the preliminary permit would be $10,000. Project power will be sold to the Connecticut Light and Power Company or United Illuminating Company.

1. This notice also consists of the following standard paragraphs: A5, A7, A9, A10, B, C, & D2.

15 a. Type of Application: Preliminary Permit.

b. Project No: 10429–000.

c. Date Filed: June 9, 1987.

d. Applicant: Riverat Glass & Electric.

e. Name of Project: West Branch.

f. Location: On the West Branch of the Ausable River in Essex and Clinton Counties, New York.

g. Filed Pursuant to: Federal Power Act, 16 U.S.C. 791(a) through 825(r).

h. Applicant Contacts:

Mr. Matthew W. Foley, Church St.
Wadhams, NY 12990, (518) 962–4514.

Mr. G. Gordon Davis, P.O. Box D1,
Elizabethtown, NY 12932, (518) 873–6351.

i. FERC Contact: Steven H. Rossi, (202) 376–9819.

j. Comment date: September 14, 1987.

k. Description of Projects: The proposed project would consist of: (1) An existing 25-foot-high, 100-foot-long concrete gravity dam; (2) a reservoir with a surface area of 8 acres, a storage capacity of 56 acre-feet, and a normal water surface elevation of 660 feet m.s.l.; (3) a reconstructed intake structure; (4) two 7-foot-diameter, 500-foot-long steel penstocks; (5) two new powerhouses containing generating units with a total installed capacity of 1,700 kW; (6) a new transmission line, 4,000 feet long; and (7) appurtenant facilities. The applicant estimates the average annual generation would be 4,500,000 kWh. The existing dam is owned by Essex County Industrial Development Agency, Elizabethtown, New York. The applicant estimates that the cost of the studies under permit would be $50,000.

l. Purpose of Project: Project power would be sold to Niagara Mohawk Power Corp.

m. This notice also consists of the following standard paragraphs: A5, A7, A9, A10, B, C, & D2.

Standard Paragraphs

A3. Development Application

Any qualified development applicant desiring to file a competing application must submit to the Commission, on or before the specified comment date for the particular application, a competing development application, or a notice of intent to file such an application. Submission of a timely notice of intent allows an interested person to file the competing development application no later than 120 days after the specified comment date for the particular application. Applications for preliminary permit will not be accepted in response to this notice.

A4. Development Application

Public notice of the filing of the initial development application, which has already been given, established the due date for filing competing applications or notices of intent. In accordance with the Commisison's regulations, any competing development applications must be filed in response to and in compliance with public notice of the initial development application. No competing applications or notices of intent may be filed in response to this notice.

A5. Preliminary Permit

Anyone desiring to file a competing application for preliminary permit for a proposed project must submit the competing application itself, or a notice of intent to file such an application, to the Commission on or before the specified comment date for the particular application (see 18 CFR 4.36

(1985)). Submission of a timely notice of intent allows an interested person to file the competing preliminary permit application no later than 30 days after the specified comment date for the particular application.

A competing preliminary permit application must conform with 18 CFR 4.30(b) (1) and (9) and 4.36.

A7. Preliminary Permit

Any qualified development applicant desiring to file a competing development application must submit to the Commission, on or before the specified comment date for the particular application, either a competing development application or a notice of intent to file such an application. Submission of a timely notice of intent to file a development application allows an interested person to file the competing application no later than 120 days after the specified comment date for the particular application.

A competing license application must conform with 18 CFR 4.30(b) (1) and (9) and 4.36.

A8. Preliminary Permit

Public notice of the filing of the initial preliminary permit application, which has already been given, established the due date for filing competing preliminary permit and development applications or notices of intent. Any competing preliminary permit or development application, or notice of intent to file a competing preliminary permit or development application, must be filed in response to and in compliance with the public notice of the initial preliminary permit application. No competing applications or notices of intent to file competing applications may be filed in response to this notice.

A competing license application must conform with 18 CFR 4.30(b) (10 and 9) and 4.36.

A9. Notice of intent

A notice of intent must specify the exact name, business address, and telephone number of the prospective applicant, include an uneqivocal statement of intent to submit, if such an application may be filed, either (1) A preliminary permit application or (2) a development application (specify which type of application), and be served on the applicant(s) named in this public notice.

A10. Proposed Scope of Studies Under Permit

A preliminary permit, if issued, does not authorize construction. The term of the proposed preliminary permit would be 36 months. The work proposed under the preliminary permit would include economic analysis, preparation of preliminary engineering plans, and a study of environmental impacts. Based on the results of these studies the Applicant would decide whether to proceed with the preparation of a development application to construct and operate the project.

B. Comments, Protests, or Motions to Intervene

Anyone may submit comments, a protest, or a motion to intervene in accordance with the requirements of the Rules of Practice and Procedure, 18 CFR 385.210, 385.211, 385.214. In determining the appropriate action to take, the Commission will consider all protests or other comments filed, but only those who file a motion to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or motions to intervene must be received on or before the specified comment date for the particular application.

C. Filing and Service of Responsive Documents

Any filings must bear in all capital letters the title *"Comments", "Recommendations for Terms and Conditions", "Notice of Intent to File Competing Application", "Competing Application", "Protest" or "Motion to Intervene"*, as applicable, and the Project Number of the particular application to which the filing is in response. Any of the above named documents must be filed by providing the original and the number of copies required by the Commission's regulations to: Kenneth F. Plumb, Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426. An additional copy must be sent to: Mr. Fred E. Springer, Director, Division of Project Management, Federal Energy Regulatory Commission, Room 203-RB, at the above address. A copy of any notice of intent, competing application or motion to intervene must also be served upon each representative of the Applicant specified in the particular application.

D1. Agency Comments

States, agencies established pursuant to Federal law that have the authority to prepare a comprehensive plan for improving, developing, and conserving a waterway affected by the project, Federal and State agencies exercising administration over fish and wildlife, flood control, navigation, irrigation, recreation, cultural and other relevant resources of the State in which the project is located, and affected Indian tribes are requested to provide comments and recommendations for terms and conditions pursuant to the Federal Power Act as amended by the Electric Consumers Protection Act of 1986, the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, the Historical and Archeological Preservation Act, the National Environmental Policy Act, Pub. L. 88-29, and other applicable statutes. Recommended terms and conditions must be based on supporting technical data filed with the Commission along with the recommendations, in order to comply with the requirement in section 313(b) of the Federal Power Act, 16 U.S.C. 8251(b), that Commission findings as to facts must be supported by substantial evidence.

All other Federal, State, and local agencies that receive this notice through direct mailing from the Commission are requested to provide comments pusuant to the statutes listed above. No other formal requests will be made. Responses should be confined to substantive issues relevant to the issuance of a license. A copy of the application may be obtained directly from the applicant. If an agency does not respond to the Commission within the time set for filing, it will be presumed to have no comments. One copy of an agency's response must also be set to the Applicant's representatives.

D2. Agency Comments

Federal, State, and local agencies are invited to file comments on the described application. (A copy of the application may be obtained by agencies directly from the Applicant.) If an agency does not file comments within the time specified for filing comments, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

D3a. Agency Comments

The U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the State Fish and Game agency(ies) are requested, for the purposes set forth in section 408 of the Energy Security Act of 1980, to file within 60 days from the date of issuance of this notice appropriate terms and conditions to protect any fish and wildlife resources or to otherwise carry out the provisions of the Fish and Wildlife Coordination Act. General comments concerning the project and its resources are requested; however, specific terms and conditions to be included as a condition of exemption must be clearly identified in the agency letter. If an agency does not file terms and conditions within this time period, that agency will be presumed to have none. Other Federal, State, and local agencies are requested to provide any comments they may have in accordance with their duties and responsibilities. No other formal requests for comments will be made. Comments should be confinded to substantive issues relevant to the granting of an exemption. If an agency does not file comments within 60 days from the date of issuance of this notice, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

D3b. Agency Comments

The U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the State Fish and Game agency(ies) are requested, for the purposes set forth in section 30 of the Federal Power Act, to file within 45 days from the date of issuance of this notice appropriate terms and conditions to protect any fish and wildlife resources or otherwise carry out the provisions of the Fish and Wildlife Coordination Act. General comments concerning the project and its resources are requested; however, specific terms and conditions to be included as a condition of exemption must be clearly identified in the agency letter. If an agency does not file terms and conditions within this time period, that agency will be presumed to have none. Other Federal, State, and local agencies are requested to provide comments they may have in accordance with their duties and responsibilities. No other formal requests for comments will be made. Comments should be confined to substantive issues relevant to the granting of an exemption. If an agency does not file comments within 45 days from the date of issuance of this notice, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

Dated: July 10, 1987.

Kenneth F. Plumb,

Secretary.

[FR Doc. 87-16155 Filed 7-15-87; 8:45 am]

BILLING CODE 6717-01-M

FEDERAL EMERGENCY MANAGEMENT AGENCY

Agency Information Collection Submitted to the Office of Management and Budget for Clearance

The Federal Emergency Management Agency (FEMA) has submitted to the Office of Management and Budget the following information collection package for clearance in accordance with the Paperwork Reduction Act (44 U.S.C. Chapter 35).

Type: Extension of 3067-0103

Title: FEMA Nuclear Power Plant Alerting and Notification System: Public Telephone Survey

Abstract: The Federal Emergency Management Agency shall randomly telephone survey the residents within the Emergency Planning Zone (EPZ) of 7 nuclear power plants as stipulated in Appendix 3 of NUREG-0654/FEMA-REP-1, Rev. 1. From an approximate sample of 2,500 households, between 250 and 385 residences will be voluntarily surveyed, following the attached standardized questionnaire.

Type of Respondents: Individuals or households

Number of Respondents: 7

Burden Hours: 104

Frequency of Recordkeeping or Reporting: Other—per survey

Copies of the above information collection request and supporting documentation can be obtained by calling or writing the FEMA Clearance Officer, Linda Shiley, (202) 646-2624, 500 C Street SW., Washington, DC 20472.

Comments should be directed to Francine Picoult, (202) 395-7231, Office of Management and Budget, 3235 NEOB, Washington, DC 20503 within two weeks of this notice.

Wesley C. Moore,

Director, Office of Administrative Support.

[FR Doc. 87-16105 Filed 7-15-87; 8:45 am]

BILLING CODE 6718-01-M

FEDERAL MARITIME COMMISSION

[Agreement No. 224-200004]

San Francisco Port Commission Agreement Request for Additional Information

Parties: San Francisco Port Commission and Atlas Shipping, Ltd.

Synopsis: Notice is hereby given that the Federal Maritime Commission pursuant to section 6(d) of the Shipping Act of 1984 (46 U.S.C. app. 1701-1720) has requested additional information from the parties to the agreement in order to complete the statutory review of Agreement No. 224-200004 as required by the Act. This action extends the review period as provided in section 6(c) of the Act.

By order of the Federal Maritime Commission.

Dated: July 13, 1987.

Joseph C. Polking,

Secretary.

[FR Doc. 87-16101 Filed 7-15-87; 8:45 am]

BILLING CODE 6730-01-M

Agreement(s) Filed; Empresa Lineas Maritimas Argentinas S.A. A. Bottacchi S.A. de Navegacion C.F.I.I., et al.

The Federal Maritime Commission hereby gives notice of the filing of the following agreement(s) pursuant to section 5 of the Shipping Act of 1984.

Interested parties may inspect and obtain a copy of each agreement at the Washington, DC Office of the Federal Maritime Commission, 1100 L Street, NW., Room 10325. Interested parties may submit comments on each agreement to the Secretary, Federal Maritime Commission, Washington, DC 20573, within 10 days after the date of the **Federal Register** in which this notice appears. The requirements for comments are found in § 572.603 of Title 46 of the Code of Federal Regulations. Interested persons should consult this section before communicating with the Commission regarding a pending agreement.

Agreement Nos.:
(1) 212-010388-008
(2) 212-010389-008

Titles:
(1) U.S. Atlantic Coast/Argentina Agreement
(2) U.S. Gulf Ports/Argentina Agreement

Parties:
(1) & (2)
Empresa Lineas Maritimas Argentinas S.A.
A. Bottacchi A.S. de Navegacion C.F.I.I.

Synopsis:
The proposed amendments would add American Transport Lines, Inc. (Amtrans) as a party to both agreements. It would also establish minimum sailings for the period April 1, 1987 through December 31, 1987, and would provide for new pool periods from April 1, 1987 through December 31, 1987, which would include revenues from cargo carried from that date by Amtrans. The parties have requested a shortened review period for both agreements.

Agreement No.:
202–011132
Title:
North Europe-United States Pacific Rate Agreement
Parties:
Trans Freight Lines
Nedlloyd Lines BV
Synopsis:
The proposed agreement would permit the parties to agree upon rates, charges, practices and conditions of service in the trade between ports and points in Europe and rail carriers' terminals at ports and points on the U.S. Pacific Coast and in the Western United States via U.S. Atlantic and Gulf interchange ports. The parties will maintain separate tariffs and may, collectively or individually, enter into service contracts with shippers.
Agreements No.:
(1) 226–011133
(2) 226–011134
(3) 226–011135
(4) 226–011136
Titles:
(1) Totem Ocean Trailer Express, Inc. (TOTE)/K Lines Equipment Interchange Agreement
(2) TOTE/Pacific Europe Express Equipment Interchange Agreement
(3) TOTE/Neptune Orient Lines, Ltd. Equipment Interchange Agreement
(4) TOTE/Johnson Scanstar Lines Equipment Interchange Agreement
Parties:
(1) TOTE
K Lines
(2) TOTE
Pacific Europe Express
(3) TOTE
Neptune Orient Lines, Ltd.
(4) TOTE
Johnson Scanstar Lines
Synopsis:
The proposed agreements would permit the parties to interchange empty and loaded containers, and related equipment, in the trade between ports and inland points in Alaska, and ports and inland points in the Far East and Europe with interchange in either Seattle or Tacoma, Washington. The parties have requested a shortened review period.

By Order of the Federal Maritime Commission.

Dated: July 13, 1987.

Joseph C. Polking,
Secretary.

[FR Doc. 87–16178 Filed 7–15–87; 8:45 am]

BILLING CODE 6730-01-M

FEDERAL RESERVE SYSTEM

[Docket No. R–0605]

Proposed Amended System of Records

AGENCY: Board of Governors of the Federal Reserve System.

ACTION: Request for comment.

SUMMARY: Pursuant to the requirements of the Privacy Act of 1974 (5 USC 552(a)), the Board of Governors of the Federal Reserve System (Federal Reserve Board) hereby gives notice of an amended system of records which it proposes to maintain.

In accordance with regulations adopted by the Department of the Treasury under the Government Securities Act of 1986 (Pub. L. 99–571), every associated person (as defined in 17 CFR 400.3(c)) of a financial institution that is a government securities broker or dealer is required to furnish information on a prescribed form (Form G–FIN–4) in order to permit a determination as to whether the person may be statutorily disqualified or otherwise restricted from being associated with a government securities broker or dealer under that Act (17 CFR 400.4(a)). In addition, when an associated person's employment with a financial institution is terminated or the person is no longer associated with the activity, notification of such termination is required to be filed (Form G–FIN–5) with the financial institution's regulatory agency. The Federal Reserve Board proposes to integrate such information that it receives with respect to associated persons of government securities brokers and dealers with its current system of records relating to municipal securities principals and municipal securities representatives (Forms MSD–4 and MSD–5). The Federal Reserve Board, in conjunction with the Federal Deposit Insurance Corporation (FDIC) and Office of the Comptroller of the Currency (OCC), adopted the currently used System of MSD–4/5 Records in 1977 in order to comply with rules of the Municipal Securities Rulemaking Board (MSRB) governing the qualifications of persons engaged in municipal securities dealer activities. The information obtained by Forms G–FIN–4 and G–FIN–5 is similar in design and purpose to information currently maintained for persons engaged in municipal security dealer activities.

DATE: Comments must be received by August 10, 1987.

ADDRESS: Comments should refer to Docket No. R–0605 and should be mailed to the Secretary of the Board, Board of Governors of the Federal Reserve System, 20th and Constitution Avenue, NW., Washington, DC 20551, or delivered to room B–2223, 20th Street and Constitution Avenue, NW., Washington, DC, between 8:45 a.m. and 5:15 p.m. weekdays. Comments may be inspected in room B–1122 between 8:45 a.m. and 5:15 p.m. weekdays.

FOR FURTHER INFORMATION CONTACT: Robert S. Plotkin, Assistant Director (202/452–2782), Susan S. Meyers, Senior Securities Regulation Analyst (202/452–2781), Division of Banking Supervision and Regulation; Joseph R. Alexander, Senior Attorney, (202/452–2489), Legal Division, Board of Governors of the Federal Reserve System, Washington, DC 20551. For the hearing impaired *only*, Telecommunications Service for the Deaf, Earnestine Hill or Dorothea Thompson (202/452–3544).

SUPPLEMENTARY INFORMATION: The Treasury Department has adopted a rule (17 CFR 400.4) that requires every associated person (as defined in 17 CFR 400.3(c)) of a financial institution that is a government securities broker or dealer to file with such financial institution a completed Form G–FIN–4, unless such person has on file with such financial institution a completed and current Form U–4 or Form MSD–4, which are forms required by associated persons of broker/dealers and bank municipal security dealers. Further, every government securities broker or dealer that is a financial institution is required to file such forms, within 10 days after receipt, with its appropriate regulatory agency. In addition, when an associated person's employment or association with a financial institution is terminated, notification of termination (Form G–FIN–5) is required to be filed with the financial institution's appropriate regulatory agency within 30 days after termination unless the financial institution has filed a Form U–5 or MSD–5 with respect to such person. In accordance with section 3(a)(34)(G) of the Securities Exchange Act of 1934, as amended by the Government Securities Act of 1986, the Federal Reserve Board is the appropriate regulatory agency for State member banks, foreign banks, State branches or State agencies of foreign banks, and commercial lending companies owned or controlled by foreign banks that are government securities brokers or government securities dealers

Similarly, under rules of the Municipal Securities Rulemaking Board financial institutions that are municipal security dealers must obtain and verify information regarding associated persons' work history, background and professional qualifications. Together with the FDIC and OCC, the Federal Reserve Board developed forms MSD–4 and MSD–5 for reporting information on associated persons of municipal security dealers that are banks and adopted a central System of Records, to be operated by the National Association of Security Dealers, which would be separate from but comparable to that maintained for securities industry personnel. The System of Records currently maintained for persons engaged in municipal security dealer activities, as required by rules of the MSRB, would seem to be well suited for the maintenance of forms relating to persons associated with financial institutions that are government securities brokers or dealers, as will be required by Treasury Department regulations. Accordingly, the Federal Reserve Board proposes to adopt the amended System of Records, BGFRS–17 as set forth below:

BGFRS–17

SYSTEM NAME:

FRB–NASD—Personnel Records of Government Securities Broker/Dealers and Municipal Securities Dealers.

SYSTEM LOCATION:

Records stored in computerized files are maintained off Board premises at the National Association of Securities Dealers ("NASD"), 9513 Key West Avenue, Rockville, Maryland 20850.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

These records may contain identifying information about persons who are or seek to be municipal securities principals or municipal securities representatives associated with a municipal securities dealer which is a State member bank of the Federal Reserve System, or a subsidiary bank of a bank holding company (other than a national bank, a bank operating under the Statute Laws of the District of Columbia or an FDIC insured nonmember bank) or a subsidiary, department or division of such subsidiary; associated persons, as defined in 17 CFR 400.3(c), of a State member bank, a foreign bank or a State branch or State agency of a foreign bank or a commercial lending company owned or controlled by a foreign bank that is a government securities dealer or government securities broker.

CATEGORIES OF RECORDS IN THE SYSTEM:

These records may contain identifying information as well as educational, employment, and disciplinary information, and, where applicable, information regarding termination of employment or association of individuals covered by the system. Identifying information includes name, addresses, date and place of birth, and may include a social security account number.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

Sections 15B, 15C, 17 and 23 of the Securities Exchange Act of 1934 (15 USC 78o–4, 78q, and 78w) and section 11(a) of the Federal Reserve Act (12 U.S.C. 248(a)(1)). Specifically, section 11(a)(1) authorizes the Board to examine the accounts and records of each member bank and to require such statements and reports as it may deem necessary.

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

Information in these records may be used:

(a) To refer, where there is an indication of a violation or potential violation of law, whether civil, criminal, or regulatory in nature, to the appropriate governmental authority, whether Federal, State, local, or foreign, or self-regulatory organization, as defined in section 3(a)(26) of the Securities Exchange Act of 1934 (15 U.S.C. 78c(a)(26)).

(b) To refer, in the event of litigation, whether civil, criminal, or regultory in nature, to the appropriate court, magistrate, or administrative law judge.

(c) To assist in any proceeding in which the Federal securities or banking laws are in issue or in which the Federal Reserve Board or a past or present member of its staff is a party or otherwise involved in an official capacity.

(d) To disclose to a Federal, State, local, or foreign governmental authority or a self-regulatory organization if necessary in order to obtain information relevant to a Federal Reserve Board inquiry concerning a person who is or seeks to be associated with a municipal securities dealer or government securities broker or government securities dealer as described in *Categories of individuals covered by the system.*

(e) To respond to a request from a Federal, State, local, or foreign governmental authority or a self-regulatory organization for information in connection with the issuance of a license or other benefit to the extent that such information is relevant and necessary.

(f) To disclose to a Congressional office from the record of an individual in response to an inquiry from the Congressional office made at the request of that individual.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Records are maintained in file folders and on computer discs.

RETRIEVABILITY:

Records are indexed by name.

SAFEGUARDS:

File folders are stored in lockable metal cabinets and computer discs are accessed only by authorized personnel.

RETENTION AND DISPOSAL:

Records may be maintained indefinitely.

SYSTEM MANAGER AND ADDRESS:

Director, Membership and Administration, National Association of Securities Dealers, 9513 Key West Avenue, Rockville, Maryland 20805.

NOTIFICATION PROCEDURE:

Inquiries, including name and date and place of birth, should be addressed to the System Manager, address above. Inquirers may be required to include a notrarized statement attesting to identity.

RECORD ACCESS PROCEDURE:

Same as *Notification above.*

CONTESTING RECORD PROCEDURES:

Same as *Notification above.*

RECORD SOURCE CATEGORIES:

Individuals on whom the records are maintained as well as municipal securities dealers and government securities dealers and brokers described in *Categories of individuals covered by the system* and Federal, State, local, and foreign governmental authorities, and self-regulatory organizations, which regulate the securities industry.

SYSTEM EXEMPTED FROM CERTAIN PROVISIONS OF THE ACT:

None.

A report of this system of records was filed with the President of the Senate, the Speaker of the House of Representatives and the Director of the Office of Management and Budget on July 10, 1987. This new system of records will become effective on August 10, 1987 without further notice unless the Board publishes a statement to the contrary in the **Federal Register.**

Board of Governors of the Federal Reserve System, July 10, 1987.

William W. Wiles,

Secretary of the Board.

[FR Doc. 87-16084 Filed 7-15-87; 8:45 am]

BILLING CODE 6210-01-M

Formations of; Acquisitions by; and Mergers of Bank Holding Companies; Allegheny Valley Bancorp, Inc., et al.

The companies listed in this notice have applied for the Board's approval under section 3 of the Bank Holding Company Act (12 U.S.C. 1842) and § 225.14 of the Board's Regulation Y (12 CFR 225.14) to become a bank holding company or to acquire a bank or bank holding company. The factors that are considered in acting on the applications are set forth in section 3(c) of the Act (12 U.S.C. 1842(c)).

Each application is available for immediate inspection at the Federal Reserve Bank indicated. Once the application has been accepted for processing, it will also be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing to the Reserve Bank or to the offices of the Board of Governors. Any comment on an application that requests a hearing must include a statement of why a written presentation would not suffice in lieu of a hearing, identifying specifically any questions of fact that are in dispute and summarizing the evidence that would be presented at a hearing.

Unless otherwise noted, comments regarding each of these applications must be received not later than August 7, 1987.

A. **Federal Reserve Bank of Cleveland** (John J. Wixted, Jr., Vice President) 1455 East Sixth Street, Cleveland, Ohio 44101:

1. *Allegheny Valley Bancorp, Inc.*, Pittsburgh, Pennsylvania; to become a bank holding company by acquiring 100 percent of the voting shares of Allegheny Valley Bank of Pittsburgh, Pittsburgh, Pennsylvania.

B. **Federal Reserve Bank of Atlanta** (Robert E. Heck, Vice President) 104 Marietta Street, NW., Atlanta, Georgia 30303:

1. *Security National Corporation*, Maitland, Florida; to become a bank holding company by acquiring 80 percent of the voting shares of Security National Bank of America, Maitland, Florida.

C. **Federal Reserve Bank of Chicago** (David S. Epstein, Assistant Vice President) 230 South LaSalle Street, Chicago, Illinois 60690:

1. *First Midwest Corporation of Delaware*, Elmwood Park, Illinois; to acquire 100 percent of the voting shares of State Bank of Union, Union, Illinois. Comments on this application must be received by August 6, 1987.

D. **Federal Reserve Bank of St. Louis** (Randall C. Sumner, Vice President) 411 Locust Street, St. Louis, Missouri 63166:

1. *First Illinois Bancorp, Inc., Employee Stock Ownership Plan and Trust*, East St. Louis, Illinois; to become a bank holding company by acquiring up to 40 percent of the voting shares of First Illinois Bancorp, Inc., East St. Louis, Illinois, and thereby indirectly acquire First Illinois Bank, East St. Louis, Illinois.

In connection with this application, First Illinois Bancorp, Inc., East St. Louis, Illinois, has applied to acquire 100 percent of the voting shares of Lindell Trust Company, St. Louis, Missouri.

E. **Federal Reserve Bank of Kansas City** (Thomas M. Hoenig, Vice President) 925 Grand Avenue, Kansas City, Missouri 64198:

1. *Community Bancshares of Chanute, Inc.*, Chanute, Kansas; to become a bank holding company by acquiring 100 percent of the voting shares of Community National Bank, Chanute, Kansas, a *de novo* bank. Comments on this application must be received by August 3, 1987.

2. *Riley County Bancshares, Inc.*, Riley, Kansas; to become a bank holding company by acquiring 97 percent of the voting shares of Riley State Bank, Riley, Kansas, which acts as agent for the sale of credit related insurance.

Board of Governors of the Federal Reserve System, July 9, 1987.

James McAfee,

Associate Secretary of the Board.

[FR Doc. 87-16085 Filed 7-15-87; 8:45 am]

BILLING CODE 6210-01-M

Application to Engage de Novo in Permissible Nonbanking Activities; First Independent Investment Group, Inc.

The company listed in this notice has filed an application under § 225.23(a)(1) of the Board's Regulation Y (12 CFR 225.23(a)(1)) for the Board's approval under section 4(c)(8) of the Bank Holding Company Act (12 U.S.C. 1843(c)(8)) and § 225.21(a) of Regulation Y (12 CFR 225.21(a)) to commence or to engage *de novo*, either directly or through a subsidiary, in a nonbanking activity that is listed in § 225.25 of Regulation Y as closely related to banking and permissible for bank holding companies. Unless otherwise noted, such activities will be conducted throughout the United States.

The application is available for immediate inspection at the Federal Reserve Bank indicated. Once the application has been accepted for processing, it will also be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing on the question whether consummation of the proposal can "reasonably be expected to produce benefits to the public, such as greater convenience, increased competition, or gains in efficiency, that outweight possible adverse effects, such as undue concentration of resources, decreased or unfair competition, conflicts of intererts, or unsound banking practices." Any request for a hearing on this question must be accompanied by a statement of the reasons a written presentation would not suffice in lieu of a hearing, identifying specifically any questions of fact that are in dispute, summarizing the evidence that would be presented at a hearing, and indicating how the party commenting would be aggrieved by approval of the proposal.

Unless otherwise noted, comments regarding the application must be received at the Reserve Bank indicated or the offices of the Board of Governors not later than July 30, 1987.

A. **Federal Reserve Bank of San Francisco** (Harry W. Green, Vice President) 101 Market Street, San Francisco, California 94105:

1. *First Independent Investment Group, Inc.*, Vancouver, Washington; to engage *de novo* in permitted credit insurance activities which include acting as underwriter, agent, or broker for life insurance, disability insurance and involuntary unemployment insurance directly related to extensions of credit made by Application and its subsidiaries pursuant to § 225.25(b)(8) of the Board's Regulation Y.

Board of Governors of the Federal Reserve System, July 9, 1987.

James McAfee,

Associate Secretary of the Board.

[FR Doc. 87-16086 Filed 7-15-87; 8:45 am]

BILLING CODE 6210-01-M

Acquisitions of Shares of Banks or Bank Holding Companies; Change in Bank Control

The notificants listed below have

applied under the Change in Bank Control Act (12 U.S.C. 1817(j)) and § 225.41 of the Board's Regulation Y (12 CFR 225.41) to acquire a bank or bank holding company. The factors that are considered in acting on the notices are set forth in paragraph 7 of the Act (12 U.S.C. 1817(j)(7)).

The notices are available for immediate inspection at the Federal Reserve Bank indicated. Once the notices have been accepted for processing, they will also be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing to the Reserve Bank indicated for that notice or to the offices of the Board of Governors. Comments must be received not later than July 30, 1987.

A. **Federal Reserve Bank of Chicago** (David S. Epstein, Assistant Vice President) 230 South LaSalle Street, Chicago, Illinois 60690:

1. *Charles S. Gaskill,* Chicago Heights, Illinois; to acquire 4.36 percent of the voting shares of Olympia Bancorporation, Inc., Chicago Heights, Illinois, and thereby indirectly acquire Heritage/Olympia Bank, Chicago Heights, Illinois.

2. *John S. Koza,* Iowa City, Iowa, to acquire .079 percent of the voting shares of ISB Financial Corp., Iowa City, Iowa.

B. **Federal Reserve Bank of Kansas City** (Thomas M. Hoenig, Vice President) 925 Grand Avenue, Kansas City, Missouri 64198:

1. *Raymond J. Herrick,* Fowler, Colorado; H. Ben Weindling, Pueblo, Colorado; and Geoffrey O. Burney, Rocky Ford, Colorado; to acquire 26.3 percent of the voting shares of First Fowler Bancorp, Inc., Fowler, Colorado, and thereby indirectly acquire First National Bank of Fowler, Fowler, Colorado.

C. **Federal Reserve Bank of Dallas** (W. Arthur Tribble, Vice President) 400 South Akard Street, Dallas, Texas 75222:

1. *Meto Miteff,* Thompson E. Purvis, Jr., and J. Howard Shelton, all of Fort Worth, Texas; to acquire 30.15 percent of the voting shares of Tarrant Bancshares, Inc., Fort Worth, Texas, and thereby indirectly acquire Tarrant Bank, Fort Worth, Texas.

Board of Governors of the Federal Reserve System, July 9, 1987.

James McAfee,

Associate Secretary of the Board.

[FR Doc. 87-16087 Filed 7-15-87; 8:45 am]

BILLING CODE 6210-01-M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. 87F-0206]

Filing of Food Additive Petition; Sun Chemical Corp.

AGENCY: Food and Drug Administration.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing that Sun Chemical Corp. has filed a petition proposing that the food additive regulations be amended to provide for the safe use of a polymer prepared from urea, ethanedial, formaldehyde, and propionaldehyde, for use as a starch and protein reactant in coatings for paper and paperboard intended to contact dry food.

FOR FURTHER INFORMATION CONTACT: Andrew D. Laumbach, Center for Food Safety and Applied Nutrition (HFF-335), Food and Drug Administration, 200 C Street, SW., Washington, DC 20204, 202-472-5690.

SUPPLEMENTARY INFORMATION: Under the Federal Food, Drug, and Cosmetic Act (sec. 409(b)(5), 72 Stat. 1786 (21 U.S.C. 348(b)(5))), notice is given that a petition (FAP 7B4006) has been filed by Sun Chemical Corp., P.O. Box 70, Chester, SC 29706, proposing that § 176.180 *Components of paper and paperboard in contact with dry food* (21 CFR 176.180) be amended to provide for the safe use of a polymer prepared from urea, ethanedial, formaldehyde, and propionaldehyde, for use as a starch and protein reactant in coatings for paper and paperboard intended to contact dry food.

The potential environmental impact of this action is being reviewed. If the agency finds that an environmental impact statement is not required and this petition results in a regulation, the notice of availability of the agency's finding of no significant impact and the evidence supporting that finding will be published with the regulation in the **Federal Register** in accordance with 21 CFR 25.40(c).

Dated: July 8, 1987.

Sanford A. Miller,

Director, Center for Food Safety and Applied Nutrition.

[FR Doc. 87-16097 Filed 7-15-87; 8:45 am]

BILLING CODE 4160-01-M

Advisory Committees; Meetings; Dental Devices Panel et al.

AGENCY: Food and Drug Administration.

ACTION: Notice.

SUMMARY: This notice announces forthcoming meetings of public advisory committees of the Food and Drug Administration (FDA). This notice also summarizes the procedures for the meetings and methods by which interested persons may participate in open public hearings before FDA's advisory committees.

Meetings: The following advisory committee meetings are announced:

Dental Devices Panel

Date, time, and place. August 27, 9 a.m., Room 337A-339A, Hubert H. Humphrey Bldg., 200 Independence Avenue, SW., Washington, DC.

Type of meeting and contact person. Open public hearing, 9 a.m. to 10 a.m.; open committee discussion, 10 a.m. to 1 p.m.; Dr. Gregory Singleton, Center for Devices and Radiological Health (HFZ-470), Food and Drug Administration, 8757 Georgia Avenue, Silver Spring, MD 20910, 301-427-7555.

General function of the committee. The committee reviews and evaluates available data on the safety and effectiveness of devices and makes recommendations for their regulation.

Agenda—Open public hearing. Interested persons may present data, information, or views, orally or in writing, on issues pending before the committee. Those desiring to make formal presentations should notify the contact person before July 27, and submit a copy of the presentation, the names and addresses of proposed participants, and an indication of the approximate time required to make their comments.

Open committee discussion. The committee will discuss a premarket approval application for a saliva-stimulating device.

Fertility and Maternal Health Drugs Advisory Committee

Date, time, and place. August 27 and 28, 9 a.m., Lister Hill Auditorium, National Library of Medicine, 8600 Rockville Pike, Bethesda, MD.

Type of meeting and contact person. Open public hearing, August 27, 9 a.m. to 10 a.m. unless public participation does not last that long; open committee discussion, 10 a.m. to 5 p.m.; open committee discussion, August 28, 9 a.m. to 5 p.m.; Philip A. Corfman, Center for Drugs and Biologics (HFN-810), Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857, 301-443-3510.

General function of the committee. The committee reviews and evaluates available data on the safety and effectiveness of marketed and investigational prescription drugs for use in obstetrics and gynecology.

Agenda—Open public hearing. Interested persons requesting to present data, information, or views, orally or in writing, on issues pending before the committee should notify the contact person.

Open committee discussion. On August 27, the committee will discuss World Health Organization (WHO) Guidelines for toxicological evaluation of steroid contraceptives. On August 28, the committee will discuss WHO Guidelines for clinical trials and postmarketing surveillance of steroid contraceptives.

FDA public advisory committee meetings may have as many as four separable portions: (1) An open public hearing, (2) an open committee discussion, (3) a closed presentation of data, and (4) a closed committee deliberation. Every advisory committee meeting shall have an open public hearing portion. Whether or not it also includes any of the other three portions will depend upon the specific meeting involved. There are no closed portions for the meetings announced in this notice. The dates and times reserved for the open portions of each committee meeting are listed above.

The open public hearing portion of each meeting shall be at least 1 hour long unless public participation does not last that long. It is emphasized, however, that the 1 hour time limit for an open public hearing represents a minimum rather than a maximum time for public participation, and an open public hearing may last for whatever longer period the committee chairperson determines will facilitate the committee's work.

Public hearings are subject to FDA's guideline (Subpart C of 21 CFR Part 10) concerning the policy and procedures for electronic media coverage of FDA's public administrative proceedings, including hearings before public advisory committees under 21 CFR Part 14. Under 21 CFR 10.205, representatives of the electronic media may be permitted, subject to certain limitations, to videotape, film, or otherwise record FDA's public administrative proceedings, including presentations by participants.

Meetings of advisory committees shall be conducted, insofar as is practical, in accordance with the agenda published in this **Federal Register** notice. Changes in the agenda will be announced at the beginning of the open portion of a meeting.

Any interested person who wishes to be assured of the right to make an oral presentation at the open public hearing portion of a meeting shall inform the contact person listed above, either orally or in writing, prior to the meeting. Any person attending the hearing who does not in advance of the meeting request an opportunity to speak will be allowed to make an oral presentation at the hearing's concludion, if time permits, at the chairperson's discretion.

Persons interested in specific agenda items to be discussed in open session may ascertain from the contact person the approximate time of discussion.

Details on the agenda, questions to be addressed by the committee, and a current list of committee members are available from the contact person before and after the meeting. Transcripts of the open portion of the meeting will be available from the Freedom of Information Office (HFI-35), Food and Drug Administration, Room 12A-16, 5600 Fishers Lane, Rockville, MD 20857, approximately 15 working days after the meeting, at a cost of 10 cents per page. The transcript may be viewed at the Dockets Management Branch (HFA-305), Food and Drug Administration, Room 4-62, 5600 Fishers Lane, Rockville, MD 20857, approximately 15 working days after the meeting, between the hours of 9 a.m. and 4 p.m., Monday through Friday. Summary minutes of the open portion of the meeting will be available from the Freedom of Information Office (address above) beginning approximately 90 days after the meeting.

This notice is issued under section 10(a) (1) and (2) of the Federal Advisory Committee Act (Pub. L. 92-463, 86 Stat. 770-776- (5 U.S.C. App. I)), and FDA's regulations (21 CFR Part 14) on advisory committees.

Dated: July 9, 1987.

John M. Taylor,

Associate Commissioner for Regualtory Affairs.

[FR Doc. 87-16098 Filed 7-15-87; 8:45 am]

BILLING CODE 4160-01-M

Advisory Committee Meeting; Amendment of Notice

AGENCY: Food and Drug Administration.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is amending an advisory committee meeting notice of the Radiologic Devices Panel to reflect a change in location of the Panel's meeting scheduled July 27, 1987. Notice of the meeting was published in the **Federal Register** of June 12, 1987 (523 FR 22536). The meeting location has been changed from FDA's Center for Devices and Radiological Health, 12720 Twinbrook Parkway, Rockville, MD, to Conference Rm. D, Parklawn Bldg., 5600 Fishers Lane, Rockville, MD, to accommodate a larger audience.

FOR FURTHER INFORMATION CONTACT: Robert Phillips, Center for Devices and Radiological Health (HFZ-430), Food and Drug Administration, 8757 Georgia Ave., Silver Spring, MD 20910, 301-427-7514.

Dated: July 9, 1987.

John M. Taylor,

Associate Commissioner for Regulatory Affairs.

[FR Doc. 87-16099 Filed 7-15-87; 8:45 am]

BILLING CODE 4160-01-M

Advisory Committee Meeting; Amendment; General and Plastic Surgery Devices Panel

AGENCY: Food and Drug Administration.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is amending an advisory committee meeting notice of the General and Plastic Surgery Devices Panel to reflect changes in location and in the open committee discussion agenda. Notice of the meeting was published in the **Federal Register** of June 17, 1987 (52 FR 23082). The location and agenda are revised as follows:

Date, time, and place. August 28, 9 a.m., Auditorium, Health and Human Services North Bldg., 330 Independence Ave. SW., Washington, DC.

Open committee discussion. The committee will discuss a reclassification petition for gut surgical sutures (Docket No. 87P-0144) and a reclassification petition for absorbable poly (-glycolide/lactide (the family of homopolymers and copolymers of glycolide and/or L-lactide)) surgical sutures (Docket No. 87P-0161).

FOR FURTHER INFORMATION CONTACT: Paul F. Tilton, Center for Devices and Radiological Health (HFZ-410), Food and Drug Administration, 8757 Georgia Avenue, Silver Spring, MD 20910, 301-427-7156.

Dated: July 9, 1987.

John M. Taylor,

Associate Commissioner for Regulatory Affairs.

[FR Doc. 87-16100 Filed 7-15-87; 8:45 am]

BILLING CODE 4160-01-M

Family Support Administration

Use of Stripper Well Settlement Funds in the Low Income Home Energy Assistance Program

AGENCY: Family Support Administration, HHS.

ACTION: Notice.

SUMMARY: The United States District Court for the District of Kansas has approved the distribution of oil overcharge funds to the State and territories under the settlement agreement reached in the *Department of Energy (DOE) Stripper Well Exemption Litigation*, M.D.L. No. 378 (D. Kan.). Pursuant to the settlement agreement, several distributions totaling $834 million have been made by the Secretary of DOE to the States. Any additional funds available through *Stripper Well* will also be distributed by DOE.

This notice provides guidance to Low Income Home Energy Assistance Program (LIHEAP) grantees on the use of the *Stripper Well* oil overcharge funds that they disburse through the LIHEA program. The purpose of this notice is to provide our interpretation on the use of these funds in the LIHEA program.

The intent of the settlement agreement in M.D.L. 378 is that the *Stripper Well* funds are to be disbursed to the States as indirect restitution on behalf of unidentifiable injured parties. The settlement agreement permits the use of crude oil overcharge funds for one or more of the five designated Federal programs, including LIHEAP; those programs approved by the DOE Office of Hearings and Appeals (OHA) in special refund proceedings pursuant to 10 CFR Part 205, Subpart V; those referenced in the 1981 DOE consent order with Standard Oil Company; or, other restitutionary programs as may be approved by the District Court or OHA. The Court specified that the oil overcharge funds were intended to supplement, not supplant, funds otherwise available to the programs to which they may be applied. As with appropriated LIHEAP funds, we want to leave maximum policy discretion in the use of *Stripper Well* funds for LIHEAP purposes.

FOR FURTHER INFORMATION CONTACT: Robin Rushton, Acting Director, Office of Energy Assistance, Family Support Administration, Room 2054, Switzer Building, 330 C Street, SW., Washington, DC 20201, telephone (202) 245-2030.

SUPPLEMENTARY INFORMATION:

(1) Except as provided below, *Stripper Well* funds used for LIHEAP should be treated as funds allotted to States for LIHEAP. Paragraph II.B.e.f.ii of the *Stripper Well* settlement agreement, and the stipulations and orders negotiated by the Georgia Poverty Rights Organization and the National Congress of American Indians, directs the States to fund existing or new energy-related programs in a manner that provides low-income consumers with an equitable share of *Stripper Well* funds allocated to each State. The LIHEA Program is cited in the settlement agreement as a program that States may fund with *Stripper Well* funds. As with oil overcharge funds allocated to the States through the Warner amendment (section 155 of the Further Continuing Appropriations Act of 1982, Pub. L. 97-377) and the decision in *United States* v. *Exxon Corporation*, (561 F. Supp. 816 (D.D.C. 1983), *Stripper Well* funds used for LIHEAP should be treated by the States as part of the State's LIHEAP allotment except as noted.

(2) As with *Exxon* funds, *Stripper Well* funds designated by a State for a particular program year shall be treated as if they were appropriated funds for that year. The *Stripper Well* funds allotted to LIHEAP would be viewed as one-year money except that up to 15% may be carried forward for obligation in the subsequent fiscal year. *Stripper Well* funds disbursed through the LIHEAP program increase the base upon which the 15% carryover limitation applies. However, the States' designation of oil overcharge funds through LIHEAP for a particular program year is not irrevocable. If the State decides that funds it had originally allocated as FY 87 funds will in fact be used for FY 88, it can change its designation. The *Stripper Well* settlement agreement gives States the flexibility to determine the fiscal year in which oil overcharge funds are used, keeping in mind the 15% carryover limitation.

(3) The *Stripper Well* settlement explicitly authorizes States to use funds for administrative expenses. Paragraph II.B.3.f.iii of the settlement agreement provides that States shall be entitled to expend for administrative expenses up to the amounts permitted by Federal legislation governing the programs cited in the *Stripper Well* agreement. Under section 2605(b)(9) of Pub. L. 97-35 as amended, a State may use for planning and administration up to 10% of its LIHEAP funds payable within a particular fiscal year, and not transferred for use under another block grant. The 10% limitation applies to the total of appropriated funds, including *Stripper Well* and *Exxon* funds, except that no *Exxon* funds may be used for administrative expenses. *Stripper Well* funds disbursed through the LIHEAP program increase the base upon which the 10% limitation on administrative expenses applies.

(4) The use of *Stripper Well* funds will be included in some reporting requirements and not others as follows:

a. Estimate of monthly obligations—Form SSA-35 should *not* reflect *Stripper Well* funds. The estimates are used for decisions about apportionment of block grant appropriations. *Stripper Well* funds are not part of this process.

b. Rollover and reallotment report—*Stripper Well* funds are to be treated like funds received under LIHEAP with respect to section 2607(b) of Pub. L. 97-35 and should be reflected in the report required by 45 CFR 96.81.

c. Number and income levels of households assisted—Households assisted with *Stripper Well* funds should be included. 45 CFR 96.82 provides that grantees report on the number and income levels of all households assisted with LIHEAP funds. However, it is not necessary to report in such a way that the number of households assisted by *Stripper Well* funds is distinguishable from the number of households otherwise assisted.

d. Audit—*Stripper Well* funds should be audited according to the same audit requirements as other LIHEAP funds.

(5) Each State must determine whether its use of *Stripper Well* funds requires the State to amend its plan. Section 2605(a)(2) of Pub. L. 97-35 as amended requires that public hearings be held by States before receiving LIHEAP grants for the next fiscal year. We believe that the availability of *Stripper Well* funds does not require new hearings under that section. However, a State's plan may have to be amended to cover the expenditure of *Stripper Well* funds. States will need to determine whether their intended use of *Stripper Well* funds is consistent with the use and distribution of LIHEAP funds expressed in their current plans. If it is not, States should make available for public inspection plans for the use of *Stripper Well* funds which require a substantial revision of their LIHEAP plans, and amend their LIHEAP plans to reflect the *Stripper Well* expenditures. As with other LIHEAP plan amendments, prior Federal approval is not required in order for a State to implement the amendment, nor is it necessary to hold additional hearings on LIHEAP. However, paragraph II.B.3.f.iv. of the settlement agreement requires the States to provide 30 days advance notice to DOE and to the court on their intended use of *Stripper Well* funds.

(6) No *Stripper Well* oil overcharge funds may be used for transfers to other block grants otherwise permitted under section 2604 (f) of Pub. L. 97–35 or to increase the base to which the transfer cap of 10% applies. As with the *Exxon* case, the intent of the settlement agreement is to provide restitutionary benefits to purchasers of petroleum products through the specified programs. The transfer of funds to State grants is not contemplated in the *Stripper Well* agreement. Therefore, to increase funds to other block grants by virtue of the *Stripper Well* settlement would be inappropriate. States should note that the settlement specifies that the funds received by each State will be used to supplement, and not to supplant, funds otherwise available for eligible programs under Federal or State law. Therefore, to avoid violating the clear intent of the court order, States electing to transfer any LIHEAP funds subsequent to the receipt of *Stripper Well* oil overcharge funds must have a basis independent of the receipt of oil overcharge funds for their action.

(7) HHS cannot set aside portions from the State shares of *Stripper Well* funds in order to make direct grants to Indian tribes which run their own LIHEAP. The State should ensure that members of LIHEAP grantee Indian tribes share equitably in the benefits provided with *Stripper Well* funds expended under LIHEAP, in accordance with the court's directive in the stipulation and order negotiated separately by the National Congress of American Indians. We are not prescribing the manner in which a State determines this equitable share, outside of the requirements in the supplemental Indian agreement. The State may make any appropriate arrangements, including requesting that the Office of Community Services withhold from LIHEAP grants to the State an amount proportionate to the Indian tribe's share of escrow funds, in order to augment the LIHEAP allocations of direct-grant Indian tribes.

(8) LIHEAP provisions in effect at the time *Stripper Well* funds are used for LIHEAP purposes govern the use of such funds. We have responsibility for oversight of *Stripper Well* funds used for LIHEAP and will exercise our normal oversight responsibilities. However, where *Stripper Well* funds are involved, either solely or commingled with LIHEAP funds, we will document any findings of substantial non-compliance or erroneous expenditures and submit our findings to DOE and the court for appropriate action.

(Catalogue of Federal Domestic Assistance Programs No. 13.789 Low Income Home Energy Assistance)

Dated: July 9, 1987.

Wayne A. Stanton,

Administrator, Family Support Administration.

[FR Doc. 87–16141 Filed 7–15–87; 8:45 am]

BILLING CODE 4150-04-M

National Institutes of Health

National Cancer Institute; Meeting of the Cancer Center Support Review Committee

Pursuant to Pub. L. 92–463, notice is hereby given of the meeting of the Cancer Center Support Review Committee, National Cancer Institute, National Institutes of Health, July 30–31, 1987, Holiday Inn Crowne Plaza, 1750 Rockville Pike, Rockville, Maryland 20852.

This meeting will be open to the public on July 30 from 8:30 a.m. to 9:30 a.m. to review administrative details. Attendance by the public will be limited to space available.

In accordance with provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5, U.S.C. and section 10(d) of Pub. L. 92–463, the meeting will be closed to the public on July 30 from approximately 9:30 a.m. to recess and on July 31 from 8:30 a.m. until adjournment, for the review, discussion and evaluation of individual grant applications. These applications and the discussions could reveal confidential trade secrets or commercial property such as patentable material and personal information concerning individuals associated with the applications, disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Mrs. Winifred Lumsden, the Committee Management Officer, National Cancer Institute, Building 31, Room 10A06, National Institutes of Health, Bethesda, Maryland 20892 (301–496–5708) will provide summaries of the meeting and rosters of committee members, upon request.

Dr. John Abrell, Executive Secretary, Cancer Center Support Review Committee, National Cancer Institute, Westwood Building, Room 834, National Institutes of Health, Bethesda, Maryland 20892 (301–496–9767) will furnish substantive program information.

Dated: July 9, 1987.

Betty J. Beveridge,

Committee Management Officer, NIH.

[FR Doc. 87–16134 Filed 7–15–87; 8:45 am]

BILLING CODE 4140-01-M

National Cancer Institute, Meeting of the Developmental Therapeutics Contracts Review Committee

Pursuant to Pub. L. 92–463, notice is hereby given of the meeting of the Developmental Therapeutics Contracts Review Committee, National Cancer Institute, National Institutes of Health, July 31, 1987, Building 31, Conference Room 8, 9000 Rockville Pike, Bethesda, Maryland 20892.

This meeting will be open to the public on July 31 from 8 a.m. to 8:30 a.m. to discuss administative details. Attendance by the public will be limited to space available.

In accordance with the provisions set forth in sections 552b(c)(4) and 552(c)(6), Title 5, U.S.C. the section 10(d) of Pub. L. 92–463, and meeting will be closed to the public 8:30 a.m. to adjournment, for the review, discussion and evaluation of individual contract proposals. The proposals and the discussions could reveal confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the proposals, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Mrs. Winifred Lumsden, Committee Management Officer, National Cancer Institute, Building 31, Room 10A06, National Institutes of Health, Bethesda, Maryland 20892 (301/496–5708) will provide a summary of the meeting and a roster of committee upon request.

Dr. Kendall G. Powers, Executive Secretary, of the Developmental Therapeutics Contracts Review Committee, Division of Extramural Activities, National Cancer Institute, Westwood Building, Room 805, National Institutes of Health, Bethesda, Maryland 20892 (301/496-7575) will provide program information, upon request.

Dated: July 9, 1987.

Betty J. Beveridge,

Committee Management Officer, NIH

[FR Doc. 87–16135 Filed 7–15–87; 8:45 am]

BILLING CODE 4140-01-M

National Center for Nursing Research; Meeting of the Nursing Science Review Committee

Pursuant to Pub. L. 92–463, notice is hereby given of the meeting of the Nursing Science Review Committee, National Center for Nursing Research, September 23–25, 1987, Building 31C, Conference Room 7, National Institutes of Health, Bethesda, Maryland 20892.

This meeting will be open to the public on September 23, from 9 a.m. to

10 a.m. Agenda items to be discussed will include the mission and organization of the National Center for Nursing Research, the Director's Report, future meeting dates, workload for the March 1988 meeting, and orientation of members. Attendance by the public will be limited to space available.

In accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5, U.S.C. and section 10(d)) of Pub. L. 92–463, the meeting will be closed to the public on September 23 from 10 a.m. to adjournment on September 25 for the review, discussion, and evaluation of individual grant applications. These applications and the discussions could reveal confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Dr. Adele H. Wood, Executive Secretary, Nursing Science Review Committee, National Center for Nursing Research, National Institutes of Health, Building 38A, Room B2E17, Bethesda, Maryland 20894, (301) 496–0526, will provide a summary of the meeting, roster of committee members, and substantive program information upon request.

Dated: July 9, 1987.

Betty J. Beveridge,

Committee Management Officer, NIH.

[FR Doc. 87–16136 Filed 7–15–87; 8:45 am]

BILLING CODE 4140–01–M

National Center of Nursing Research; Meeting of the National Center for Nursing Research Advisory Council

Pursuant to Pub. L. 92–463, notice is hereby given of the meeting of the National Center for Nursing Research Advisory Council, National Center for Nursing Research, September 2–3, 1987, Building 31C, Conference Room 6, National Institute of Health, Bethesda, Maryland 20892.

This meeting will be open to the public on September 2, from 9 a.m. to recess. Agenda items to be discussed will include the District's Report, the Legislative Process, Fraud and Abuse, Duplication of Research Efforts, Research on Diagnostic Related Groups, and Shortage of Nurses. Attendance by the public will be limited to space available.

In accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5, U.S. Code section 10(d)) of Pub. L. 92–463, the meeting will be closed to the public on September 3, 9 a.m. to completion of the review, discussion, and evaluation of individual grant applications. The applications and the discussions could reveal confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

The meeting will be open on September 3, immediately following the review of applications, if any policy issues are raised which need further discussion.

Mrs., Ruth K. Aladj, Executive Secretary, National Center for Nursing Research Advisory Council, National Institutes of Health, Building 38A, Room B2E17, Bethesda, Maryland 20894, (301) 496–0523, will provide a summary of the meeting, roster of committee members, and substantive program information upon request.

Dated: July 9, 1987.

Betty J. Beveridge,

Committee Management Officer, NIH.

[FR Doc. 87–16137 Filed 7–15–87; 8:45 am]

BILLING CODE 4140–01–M

National Institute of Allergy and Infectious Diseases; Special Meeting of the National Advisory Allergy and Infectious Diseases Council

Pursuant to Pub. L. 92–463, notice is hereby given of a special meeting of the National Advisory Allergy and Infectious Diseases Council, National Institute of Allergy and Infectious Diseases on August 10, 1987, at the National Institutes of Health, Building 31C, Conference Room 6, Bethesda, Maryland 20892.

The meeting will be open to the public on August 10 from approximately 12:30 p.m. to 12:45 p.m. for opening remarks of the Institute Director, a discussion of procedural matters, and Council business.

In accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5, U.S.C. and section 10(d) of Pub. L. 92–463, the meeting of the full National Advisory Allergy and Infectious Diseases Council will be closed to the public from approximately 12:45 p.m. until adjournment on August 10 for the review, discussion, and evaluation of individual grant applications. These applications and the discussions could reveal confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the applications, disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Dr. John W. Diggs, Director, Extramural Activities Program, NIAID, NIH Westwood Building, Room 703, telephone (301–496–7291), will provide substantive program information.

(Catalog of Federal Domestic Assistance Program Nos. 13.855, Pharmacological Sciences; 13.856, Microbiology and Infectious Diseases Research, National Institutes of Health)

Dated: July 9, 1987.

Betty J. Beveridge,

Committee Management Officer, NIH.

[FR Doc. 87–16138 Filed 7–15–87; 8:45 am]

BILLING CODE 4140–01–M

Public Health Service

Privacy Act of 1974; Systems of Record

AGENCY: Department of Health and Human Services; Public Health Service.

ACTION: Notification of an altered Privacy Act system of records, 09–37–0015, "National Center for Health Services Research and Health Care Technology Assessment (NCHSR) Grants Records Systems, HHS/OASH/NCHSR."

SUMMARY: In accordance with the requirements of the Privacy Act, the Public Health Service (PHS) is publishing a notice of a major alteration of the system of records, 09–37–0015, "National Center for Health Services Research and Health Care Technology Assessment (NCHSR) Grants Records System HHS/OASH/NCHSR." The purpose of this alteration is to add research training grant and research fellowship applications to the existing system of records. We are also proposing to add eight new routine uses.

DATE: PHS invites interested parties to submit comments on the proposed new routine uses on or before August 17, 1987. PHS has sent a Report on an Altered System to the Congress and to the Office of Management and Budget (OMB) on July 7, 1987. The proposed alteration will be effective 60 days from the date submitted to OMB unless PHS received comments on the routine uses which would result in a contrary determination.

ADDRESS: Please submit comments to: Ms. Deborah Hutchison, Privacy Act Officer, National Center for Health Services Research, 18–23 Parklawn Building, 5600 Fishers Lane, Rockville, Maryland 20857.

Comments received will be available for inspection at the same address from 9:00 a.m. to 4:00 p.m., Monday thru Friday.

FOR FURTHER INFORMATION CONTACT: Mr. Ralph L. Sloat, Chief, Grants Management Branch, National Center for Health Services Research, 18A–03 Parklawn Building, 5600 Fishers Lane, Rockville, Maryland 20857, Telephone: (301) 443–4033. This is not a toll free number.

SUPPLEMENTARY INFORMATION: The National Center for Health Services Research and Health Care Technology Assessment (NCHSR) proposes a major alteration to the system of records, 90–37–0015, "National Center for Health Services Research and Health Care Technology Assessment (NCHSR) Grants Records System HHS/OASH/NCHSR." The proposed alteration will add training grant and fellowship application records to the existing system of research grant files. Research training grant applications are submitted by educational institutions to support predoctoral and postdoctoral training in health services research at the institution. Training program directors select their own trainees. Research fellowship applications are submitted by individuals seeking Federal support for predoctoral or postdoctoral training in health services research at an educational institution which has accepted them for enrollment.

The reason for the expansion of this system is the Congressional provision of funding to NCHSR under the long-established National Research Service Awards (NRSA) training program. The NRSA program includes support for both training grants and fellowships. It also requires that both trainees and fellows agree to payback provisions as required by NRSA. Due to an administrative oversight, these records have not previously been included in the published system notice.

Revisions in the system notice include expanding (1) the "Categories of Individuals Covered by the System" section to include Program Directors and Research Fellows; (2) the "Categories of Records in the System" section to include research training grant and fellowship applications, reviewers' evaluation of the applications, appointment forms, and termination notices; (3) the "Authority for Maintenance of the System" by adding section 487 (National Research Service Awards (42 U.S.C. 288) of the Public Health Service Act, Title II to the existing authorities listed. NCHSR is also adding eight new routine uses. These new routine uses are to permit NCHSR to release information in certain specified cases to other organizations or individuals for assistance in review of applications or for good administrative procedures, or to protect the Government's interests.

Specifically, new routine uses are proposed for the following situations:

Routine use 4 will permit NCHSR to notify the Science Information Exchange of funded projects so that other researchers can keep up to date on research underway before publication.

Routine use 5 will permit NCHSR to utilize the expertise of individuals who are not official members of established grant review committees to provide comments on particular applications as requested by the Executive Secretary of the review committee.

Routine use 6 will permit NCHSR to make use of an outside consulting firm to make special analyses, if needed, on trends and data in NCHSR grant files. Any such firms would have to certify to abide by Privacy Act requirements before being granted access to any files in the system of records.

Routine use 7 will permit NCHSR to respond to any valid request which may be received from another Federal agency for information in a particular grant file relevant to certain stated administrative actions to be taken by that agency.

Routine use 8 acknowledges that NCHSR will respond to any valid subpoena from a Federal agency which may be received requesting information in the system of records.

Routine use 9 permits NCHSR to assist in any requests for information by the cognizant audit agency.

Routine use 10 permits NCHSR to assist with any investigation of a violation or potential violation of law by making information in a particular file in the system of records available to an appropriate Federal or State agency as requested.

Routine use 11 permits NCHSR to disclosure information in its files for any funded project to the grantee institution if requested.

In addition, to the revisions mentioned, minor editorial changes have been made throughout the systems notice to improve clarity and specificity.

The system notice was published in its entirety most recently in the **Federal Register** Vol. 51, pp 423 70–71, November 24, 1986. We are republishing the system notice in its entirety below to incorporate the proposed changes. It is written in the present, rather than the future tense, in order to avoid the unnecessary expenditure of public funds to republish the notice after the changes become effective.

Dated: July 9, 1987.

Wilford J. Forbush,

Deputy Assistant Secretary for Health Operation and Director, Office of Management.

09-37-0015

SYSTEM NAME:

National Center for Health Services Research and Health Care Technology Assessment (NCHSR), Grants Records System. HHS/OASH/NCHSR.

SECURITY CLASSIFICATION:

None.

SYSTEM LOCATION:

National Center for Health Services Research and Health Care Technology Assessment, Parklawn Building, Room 18A–10, 5600 Fishers Lane, Rockville, Maryland 20857.

Federal Records Center, 4205 Suitland Road, Suitland, Maryland 20409.

Records may also be located at contractor sites. A list of contractor sites is available from the System Manager, upon request.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Research grant principal investigators, research training grant program directors, and research fellowship recipients.

CATEGORIES OF RECORDS IN THE SYSTEM:

Research grant, research training grant, and research fellowship files, including grant applications, grant award notices, individual credit reports, summary comments of peer reviewers, salary information, project staffing lists, general correspondence, and Social Security Numbers.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

Public Health Service Act, Section 304, (General Authority Respecting Health Statistics and Health Services Research, Evaluations, and Demonstrations (42 U.S.C. 242b)), Section 305, (National Center for Health Services Research (42 U.S.C. 242c)), Section 308, (General Provisions Respecting Sections 304, 305, 306, and 307 (42 U.S.C. 242m)), Section 487 (National Research Service Awards (42 U.S.C. 288)).

PURPOSE(S):

The information in this system is used to facilitate day-to-day grants management operations and for purposes of review, analysis, planning and policy formulation by NCHSR staff members and by other components of DHHS which conduct research.

NCHSR refers these records to the DHHS Office of the Assistant Secretary for Management and Budget (ASMB) for the purpose of monitoring payback, and if necessary, debt collection. These records are maintained by ASMB in system of records 09-90-0024, "According Records of Payments to and Collections from Individuals from Operating Division Agency and Regional Financial Management and Disbursing Office, HHS/OS/ASMB."

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

1. Disclose may be made to a congressional office from the record of an individual in response to an inquiry from the congressional office made at the request of that individual.

2. The Department may disclosure information from this system of records to the Department of Justice, to a court or other tribunal, when

(a) HHS, or any component thereof; or

(b) Any HHS employee in his or her official capacity; or

(c) Any HHS employee in his or her individual capacity where the Department of Justice (or HHS, where it is authorized to do so) has agreed to represent the employee; or

(d) The United States or any agency thereof where HHS determines that the litigation is likely to affect HHS or any of its components, is a party to litigation or has an interest in such litigation, and HHS determines that the use of such records by the Department of Justice, the court or other tribunal, is relevant and necessary to the litigation and would help in the effective representation of the governmental party, provided, however, that in each case, HHS determines that such disclosure is compatible with the purpose for which the records were collected.

3. NCHSR may disclose information about an individual grant applicant or fellowship applicant to credit reporting agencies to obtain a credit report in order to determine his/her creditworthiness.

4. Disclosure may be made to the National Technical Information Service (NTIS), U.S. Department of Commerce, to contribute to the Smithsonian Science Information Exchange, for dissemination of scientific and fiscal information on funded awards (abstracts and relevant administrative and financial data).

5. Disclosure may be made to qualified experts not within the definition of Department employees for opinions as a part of the application review and award process.

6. Disclosure may be made to a private firm for the purpose of providing services relating to grant review, or for carrying out quality assessment, program evaluation, and/or management reviews. The contractor is required to maintain Privacy Act safeguards with respect to such records.

7. Disclosure may be made to a Federal agency, in response to its request, in connection with the hiring or retention of an employee, the issuance of security clearance, the reporting of an investigation of an employee, the letting of a contract, or the issuance of a license, grant, or other benefit of the requesting agency, to the extent that the record is relevant and necessary to the requesting agency's decision on the matter.

8. Where Federal agencies having power to subpoena other Federal agencies' records, such as the Internal Revenue Service or the Civil Rights Commission, issue a subpoena to the Department for records in this system of records, the Department will make such records available.

9. Disclosure may be made to the cognizant Audit Agency for auditing.

10. In the event that a system of records maintained by the Department indicates a violation or potential violation of law, whether civil, criminal or regulatory in nature, and whether arising by statute or by regulation, rule or order issued pursuant thereto, the relevant records in the system of records may be referred to as routine use, to the appropriate agency, whether Federal (e.g., the Department of Justice), or State (e.g., the State Attorney General's office) charged with the responsibility of investigating or prosecuting such violation or charged with enforcing or implementing the statute or rule, regulation or order issued pursuant thereto for litigation.

11. Disclosure may be made to the grantee institution in connection with performance or administration under the terms and conditions of the award, or in connection with problems that might arise in performance or administration if an award is made on a grant proposal.

DISCLOSURE TO CONSUMER REPORTING AGENCIES:

Disclosure pursuant to 5 U.S.C. 522a(b)(12): Disclosure may be made from this system to "consumer reporting agencies" as defined in the Fair Credit Reporting Act (15 U.S.C. 1681a(f) or the Federal Claims Collection Act of 1966 (31 U.S.C. 3701(a)(3)): The purpose of this disclosure is to aid in the collection of outstanding debts owed to the Federal Government; typically, to provide an incentive for debtors to repay delinquent Federal Government debts by making these debts part of their credit records. Disclosure of records is limited to the individual's name, address, Social Security number, and other information necessary to establish the individual's identity; the amount, status, and history of the claim; and the agency program under which the claim arose. This disclosure will be made only after the procedural requirements of 31 U.S.C. 3711(f) have been followed.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Manual files (file folders).

RETRIEVABILITY:

Retrievable by name and grant number.

SAFEGUARDS:

1. Authorized Users: Only staff members of the Grants Management Branch (GMB) have regular access. Limited access to official grant files is granted to other DHHS staff with need-to-know about NCHSRA research projects, only with authorization of the System Manager.

2. Physical Safeguards: Locked file cabinets, locked offices, general building security.

3. Procedural Safeguards: DHHS staff may inspect NCHSR grant records on a need-to-know basis only, with the approval of the System Manager. Visitors are not left unattended in the office containing the files. Offices are locked when not in use. Grant records are either transmitted in sealed envelopes or are hand-carried.

RETENTION AND DISPOSAL:

Approved grant applications and their respective files are retained at NCHSR for two years beyond the termination date of the grant. Rejected grant applications are held for one year. The grant files are then retired to a Federal Records Center and subsequently disposed of in accordance with the PHS/OASH records control schedule. The records control schedule may be obtained by writing to the System Manager at the following address.

SYSTEM MANAGER(S) AND ADDRESS:

Chief, Grants Management Branch; National Center for Health Services Research and Health Care Technology Assessment, Parklawn, Building, Room 18A-10, 5600 Fishers Lane, Rockville, Maryland 20857.

NOTIFICATION PROCEDURE:

To determine if a record exists, write to the System Manager at the above address. Specify name and/or grant number.

RECORD ACCESS PROCEDURE:

Same as notification procedures. Requesters should also reasonably specify the record contents being sought. Positive identification is required. You may also request an accounting of disclosures that have been made of your record, if any.

CONTESTING RECORD PROCEDURES:

Contact the official at the address specified under Systems Manager above and reasonably identify the record, specify the information being contested, the corrective action sought, and your reasons for requesting the correction, along with supporting information to show how the record is inaccurate, incomplete, untimely, or irrelevant.

RECORD SOURCE CATEGORIES:

Grant applicants, reports and correspondence from the research community, and statements from grant review committees; consumer reporting agencies.

SYSTEMS EXEMPTED FROM CERTAIN PROVISIONS OF THE ACT:

None.

[FR Doc. 87-16142 Filed 7-15-87; 8:45 am]

BILLING CODE 4160-17-M

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

Partition Agreement Between the Cherokee Nation of Oklahoma and the Kaw, Otoe-Missouria, Pawnee, Ponca and Tonkawa Indian Tribes of Oklahoma

July 2, 1987.

This notice is published pursuant to section 1 of the Act of May 1, 1986, Pub. L. 99-283, 100 Stat. 404, title to the following described land was declared to be held in trust by the *United States of America* for the Cherokee Nation of Oklahoma, Kaw, Otoe-Missouria, Pawnee, Ponca, and Tonkawa Indian Tribes of Oklahoma.

Township 29 North, Range 2 East, I.M. Oklahoma

Parcel #1

Sec. 13. Lot 4; SW¼ NW¼; W½ SW¼; and parts of Lot 3, SE¼ NW¼, E½ SW¼ lying west of the east right-of-way line of the Atchison, Topeka and Santa Fe Railroad—281.17 acres
Sec. 27, All—642.76 acres
Sec. 28, All—637.88 acres

Containing in all, 1,561.81 Acres of land, more or less.

Township 29 North, Range 2 East, I.M., Oklahoma

Parcel #2

Sec. 14, Lots 1 to 4 inclusive; S½ N½; S½—626.16 Acres
Sec. 15, Lots 1 to 4 inclusive; S½ N½; S½—626.97 Acres
Sec. 16, Lots 1 and 2; S½ NW¼; SE¼—313.91 Acres
Sec. 21, E½ and those portions of NW¼ and SW¼ lying East of the West right-of-way line of S.L. & Santa Fe Railroad—489.74 Acres
Sec. 22, All—640.00 Acres
Sec. 23, All—640.00 Acres
Sec. 24, That portion of NW¼ and SW¼ lying West of the East right-of-way line of the Atchison, Topeka and Santa Fe Railroad—235.25 Acres
Sec. 25, That portion of NW¼ and N½ SW¼ lying West of the East right-of-way line of the Atchison, Topeka and Santa Fe Railroad—57.30 Acres
Sec. 26, All (except that portion of Lot 1 lying East of the East right-of-way line of the Atchison, Topeka and Santa Fe Railroad, containing 12.68 Acres)—633.06 Acres

Containing in all, 4,262.39 Acres of land, more or less.

Section 1(c) of Pub. L. 99-283, 100 Stat. 404, requires the Secretary of the Interior to publish in the **Federal Register** a description of the interests in land partitioned and held in trust for the above named tribes in accordance with the Partition Agreement approved on November 5, 1986, by the Acting Area Director, Anadarko Area Office, and the Agreement made on August 30, 1985, between the Cherokee Nation of Oklahoma and the "Five Tribes."

To the Cherokee Nation of Oklahoma

All surface interest in the:
T. 29 N., R. 2 E.,
Sec. 13, Lot 4; SW¼ NW¼; W½ SW¼; and the parts of Lot 3, SE¼ NW¼, E½ SW¼ lying west of the east right-of-way line of the Atchison, Topeka and Santa Fe Railroad—281.17 Acres
Sec. 27, All—642.76 Acres
Sec. 28, All—637.88 Acres

Containing 1,561.81 Acres, more or less.

To the Kaw Tribe

All surface interest in the:
T. 29 N., R. 2 E.,
Sec. 15, W½ W½ SW¼ SE¼; W½ E½ W½ SW¼ SE¼; E½ E½ E½ SE¼ SW¼—20.00 Acres
Sec. 21, That portion of S½ NW ¼, S½ NE¼ NW¼ and SW¼ lying East of the West right-of-way line of S. L. and Santa Fe Railroad; SE¼; S½ NE¼; S½ N½ NE¼—448.97 Acres
Sec. 22, NW¼ NW¼ NW¼ NE¼; W½ NE¼ NW¼ NW¼ NE¼; S½ N½ NW¼ NE¼; S½NW¼ NE¼; SW¼ NE¼; E½ E½ NE¼ NE¼ NW¼; S½ N½ NW¼; S½ NW¼; W½ SW¼; W½ E½ SW¼; NE¼ NE¼ SW¼; and N½ NW¼ SE¼—346.25 Acres

Containing 815.22 Acres, more or less.

To the Otoe-Missouria Tribe

All surface interest in the:
T. 29 N., R. 2 E.,
Sec. 15, That portion of Lot 1 lying East of the centerline of the North entrance road; That portion of SE¼ NE¼ lying East of the centerline of the North entrance road; The North 268.17 feet of the NW¼ NW¼ NE¼ SE¼ lying East of the centerline of the North entrance road; and The North 268.17 feet of the W½ NE¼ NW¼ NE¼ SE¼; All of E½ NE¼ NW¼ NE¼ SE¼; and N½ NE¼ NE¼ SE¼—69.34 Acres
Sec. 14, Lots 1, 2, 3 and 4; S½ N½; SE¼; E½ SW¼; E½ W½ SW¼; E½ E½ W½ W½ SW¼; NW¼ NW¼ NW¼ SW¼; and W½ NE¼ NW¼ NW¼ SW¼—599.91 Acres
Sec. 23, N½ N½ NE¼; N½ S½ N½ NE¼; N½ NE¼ NW¼; N½ S½ NE¼ NW¼; E½ E½ NE¼ NW¼ NW¼; and E½ NE¼ SE¼ NW¼NW¼—93.75 Acres
Sec. 24, N½ NW¼ NW¼; N½ S½ NW¼NW¼; NW¼ NE¼ NW¼; N½ SW¼ NE¼ NW¼; and that portion of the NE¼ NE¼ NW¼ and N½ SE¼ NE¼ NW¼ lying West of the East right-of-way line of the Atchison, Topeka and Santa Fe Railroad—52.30 Acres

Containing 815.30 Acres, more or less.

To the Pawnee Tribe

All surface interest in the:
T. 29 N., R. 2 E.,
Sec. 22, S½ N½ NE¼ NE¼; S½ NE¼ NE¼; SE¼ NE¼; E½ SE¼; SW¼ SE¼; S½ NW¼ SE¼; E½ SE¼ SW¼; and SE¼ NE¼ SW¼—240.00 Acres
Sec. 26, NW¼; W½ W½ NE¼; N½ SW¼; W½ NW¼ SE¼; W½ Lot 2; Lot 3 and Lot 4—403.56 Acres
Sec. 23, SW¼; SW¼ SW¼ SE¼; and S½ S½ SW¼ NW¼—180.00 Acres

Containing 823.56 Acres, more or less.

To the Ponca Tribe

All surface interest in the:
T. 29 N., R. 2 E.,
Sec. 15, That portion of Lot 1 lying West of the centerline of the North entrance road; That portion of SE¼ NE¼ lying West of the centerline of the North entrance road; The North 268.17 feet of the NW¼ NW¼ NE¼ SE¼ lying West of the centerline of the North entrance road; Lot 2 and SW¼ NE¼; The North 268.17 feet of the NE¼ NE¼ NW¼ SE¼; All of NW¼ NE¼ NW¼ SE¼; N½ NW¼ NW¼ SE¼; SW¼ NW¼ NW¼ SE¼; W½ SE¼ NW¼ NW¼ SE¼; W½ SW¼ NW¼ SE¼; W½ E½ SW¼ NW¼ SE¼; S½ NW¼; Lots 3 and 4; N½ SW¼; SW¼ SW¼; W½ SE¼ SW¼; W½ E½ SE¼ SW¼; and W½ E½ E½ SE¼ SW¼—422.66 Acres
Sec. 16, Lots 1 and 2; S½ NE¼; and SE¼—313.91 Acres
Sec. 22, N½ NW¼ NW¼; NW¼ NE¼ NW¼; W½ NE¼ NE¼ NW¼ and W½ E½ NE¼ NE¼ NW¼—37.50 Acres
Sec. 21, N½ N½ NE¼—40.00 Acres

That portion of the E½ NE¼ NE¼ NW¼ lying East of the West right-of-way line of the S. L. and S. F. Railroad—.77 Acres

Containing 814.84 Acres, more or less.

To the Tonkawa Tribe

All surface interest in the:

T. 29 N., R. 2 E.,
- Sec. 26, E½, Lot 2; E½ NW¼ SE¼; NE¼ SE¼; That portion of Lot 1 lying West of the East right-of-way line of the Atchison, Topeka and Santa Fe Railroad; E½ NE¼; and E½ W½ NE¼—229.48 Acres
- Sec. 25, That portion of the NW¼ and N½ SW¼ lying West of the East right-of-way line of the Atchison, Topeka and Santa Fe Railroad—57.30 Acres
- Sec. 23, E½ SE¼; E½ W½ SE¼; W½ NW¼ SE¼; NW¼ SW¼ SE¼; S½ NE¼; S½ S½ N½ NE¼; SE¼ NW¼; N½ SW¼ NW¼; N½ S½ SW¼ NW¼; S½ S½ NE¼ NW¼; SW¼ NW¼ NW¼; S½ NW¼ NW¼ NW¼; S½ SE¼ NW¼ NW¼; NW¼ SE¼ NW¼ NW¼; W½ NE¼ SE¼ NW¼ NW¼; W½ SW¼ NE¼ NW¼ NW¼; SW¼ SE¼ NE¼ NW¼ NW¼; SE¼ SW¼ NE¼ NW¼ NW¼—356.25 Acres
- Sec. 24, That portion of the SW¼, SE¼ NW¼ & SW¼ SE¼ NE¼ NW¼ lying West of the East right-of-way line of the Atchison, Topeka and Santa Fe Railroad; SW¼ NW¼; S½ S½ NW¼ NW¼; S½ SW¼ NE¼ NW¼—182.95 Acres

Containing 825.98 Acres, more or less.

Whereas, the Kaw and Otoe-Missouria Tribe hereby agree and declare that the following described water wells now in existence upon acreage set aside for the Kaw and Otoe-Missouria Tribes shall continue to provide fresh water for the needs of the "Campus Area" held in joint ownership by *The Five Tribes:*

Point Descriptions

Kaw Tribe:

1. Water well and building (center of a 11 feet x 11 feet building):

Commence at the SW Corner of the E½ NE¼ NW¼ NW¼ NE¼ of Section 22, T. 29 N., R. 2 E.; Thence North along the West line of the Chilocco School Campus a distance of 566.59 feet; thence West a distance of 213.81 feet to the center of a water well building.

2. *Concrete tank.* Commence at SW Corner of the E½ NE¼ NW¼ NW¼ NE¼ of Section 22, T. 29 N., R. 2 E.; Thence North along the West line of the Chilocco School Campus a distance of 573.38 feet; Thence West a distance of 234.06 feet to the center of a concrete tank.

3. *Concrete tank.* Commence at SW Corner of the E½ NE¼ NW¼ NW¼ NE¼ of Section 22, T. 29 N., R. 2 E.; Thence North along the West line of the Chilocco School Campus a distance of 628.35 feet; Thence West a distance of 320.53 feet to the center of a concrete tank.

4. *Concrete tank.* Commence at SW Corner of the E½ NE¼ NW¼ NW¼ NE¼ of Section 22, T. 29 N., R. 2 E.; Thence North along the West line of the Chilocco School Campus a distance of 678.62 feet; Thence West a distance of 379.97 feet to the center of a concrete tank.

Otoe-Missouria Tribe:

1. *Water well and building.* Commence at the NE Corner of the W½ SE¼ NW¼ NW¼ SW¼ of Section 14, Township 29 N., R. 2 E.; Thence North a distance of 18.73 feet; Thence West a distance of 217.77 feet to the center of a water well building.

2. *Water well and building.* Commence at the NE Corner of the W½ SE¼ NW¼ NW¼ SW¼ of Section 14, T. 29 N., R. 2 E.; Thence North a distance of 484.03 feet; Thence West a distance of 92.86 feet to the center of a water well building.

Whereas, said Kaw and Otoe-Missouria Tribes agree *The Five Tribes* shall continue to have the joint and perpetual right of use and maintenance of said wells, pipelines and appurtenances thereto, together with the right of ingress and egress thereto for that specific purpose.

Whereas, the Ponca and the Otoe-Missouria Tribes hereby agree and declare that the following described roads now in existence upon the acreage set aside for the said Ponca and the Otoe-Missouria Tribes shall continue to provide public access to and from all land abutting thereto:

Right-of-way Descriptions

Ponca and Otoe-Missouria:

A road right-of-way through a portion of the E½ of Section 15, T. 29 N., R. 2 E., Indian Meridian, Kay County, Oklahoma, and being also described as follows:

Commence at the SE Corner of Section 15; Thence North 2,371.5 feet; Thence West 1,019.59 feet to a PK Nail which is the centerline of a roadway, the Point of Beginning of a right-of-way having a width of 33 feet each side of the centerline; Thence N 2°16′31″ East along the centerline of the roadway a distance of 2,807.08 feet to a Point on the Northside of Section 15 which is the Point of Ending. The right-of-way contains 4.25 acres, more or less.

Otoe-Missouria:

A road right-of-way through a portion of the S½ of Section 14, T. 29 N., R. 2 E., Indian Meridian, Kay County, Oklahoma, and being also described as follows:

Commence at the SE corner of Section 14; Thence N 00°00′22″ along the East line of Section 14 a distance of 816.14 feet to the centerline of a concrete roadway, the Point of Beginning of a right-of-way having a width of 50.00 feet each side of the centerline; Thence South 89°00′53″ West along the centerline of the concrete roadway a distance of 4,784.44 feet to a point on the East line of the Chilocco School Campus, which is the Point of Ending. The right-of-way contains 10.98 acres, more or less.

Hazel E. Elbert,

Acting Assistant Secretary, Indian Affairs.

[FR Doc. 87-16116 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-02-M

Fiscal Year Operation and Maintenance Charges; San Carlos Irrigation Project, AZ

AGENCY: Bureau of Indian Affairs, Department of the Interior.

ACTION: General notice.

SUMMARY: The purpose of this general notice is to charge the per acre assessment rate for the operation and maintenance of the irrigation facilities of the Joint Works of the San Carlos Irrigation Project to properly reflect the cost of labor, materials, equipment and services. The change is from $30.04 per acre to $31.16 per acre per year.

EFFECTIVE DATE: This general notice shall become effective July.

FOR FURTHER INFORMATION CONTACT: Project Engineer, San Carlos Irrigation Project, P.O. Box 250, Coolidge, Arizona 85228, telephone (602) 723-5439.

SUPPLEMENTARY INFORMATION:

Authority: The authority to issue this document is vested in the Secretary of the Interior by 5 U.S.C. 301 and the Act of August 14, 1914 (38 Stat. 583, 25 U.S.C. 385).

This general notice is issued by authority delegated to the Assistant Secretary for Indian Affairs by the Secretary of the Interior in 209 DM 8 and redelegated by the Assistant Secretary for Indian Affairs to the Area Director in 10 BIAM 3 and pursuant to § 171.1(e) of Part 171, Subchapter H, Chapter 1, Title 25 of the Code of Federal Regulations.

Determination Under E.O. 12291

Pursuant to E.O. 12291 of February 17, 1981 (46 FR 13193, February 19, 1981), each agency is to determine whether a rule it intends to issue is a major rule. The Bureau of Indian Affairs has determined that for the purpose of E.O. 12291, the proposed rate change is not a major rule and does not require preparation of Regulatory Impact Analysis because;

1. It will not have annual effect on the economy of $100 million or more; or

2. It will not result in major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or

3. It will not have significant adverse effects on competition, investment, productivity, innovation, or on the ability of the United States—based enterprises to compete with foreign markets—based enterprises in domestic or export markets.

Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980 and 43 CFR Part 14, each agency is required to prepare and make available for public comment on regulatory flexibility analysis if a proposed rule will have a significant economic effect of a substantial number of small entities. The Bureau of Indian Affairs has determined that,

(1) A substantial number of small entities will not be effected as the proposed rate change will have effect upon one entity, the San Carlos Irrigation and Drainage District, organized and existing under the laws of the State of Arizona; and

(2) The impacts of the proposed rate change will not cause an adverse economic impact upon a substantial number of small entities.

Basis of Proposal

A study of the costs was made of operation, maintenance and replacements of the Joint Works of the San Carlos Irrigation Project. On April 17, 1987, the study was presented to a Fact Finding Committee.

The Fact Finding

Committee is made up of representatives from the Gila River Indian Community, the San Carlos Irrigation and Drainage District (SCIDD), Pima Agency, San Carlos Irrigation Project, and Phoenix Area Office. Comments received (italics) from the Fact Finding Committee and responses were as follows:

(1) The debt retirement line item should be considered as a working reserve account and be shown separate from the cash balance

The FY 1989 assessment report has been modified accordingly.

(2) SCIDD Objected To The Indian Works Not Paying Their Assessment Earlier

It was pointed out that funds could not be paid until appropriated by Congress and made available to Pima Agency.

(3) There is a substantial increase in Supply and Storage Costs projected for FY 1989

Most of this increase is to reflect the cost of personnel operating Coolidge Dam. For the past few years, salaries have been paid out of the construction funds for penstock rehabilitation. This work is essentially complete.

(4) The Power for Pumping charge is less than last years, does that reflect a projected increase in well efficiency?

No, the power for pumping charge does not reflect a projected increase in well efficiency. The pumping charge cost is based on a ten (10) year average of acre-feet of water pumped, current operation and maintenance costs at Collidge Dam, equipment and transmission cost.

The Project Engineer submitted his recommendation to the Phoenix Area Director for a change in the per acre assessment rate for operation and maintenance of the irrigation facilities of the Joint Works of the San Carlos Irrigation Project for Fiscal Year 1989 and subsequent years thereafter, until further notice, at a rate of $31.16 per acres for land under the Project. The revenue to be derived from the assessment would provide for the projected costs of all labor, materials, equipment replacement and power for irrigation pumps required for operation and maintenance of the project.

Principle Author

The principle author of this document is Ronald D. Rogers, Bureau of Indian Affairs, Phoenix Area Office, P.O. Box 7007, Phoenix, Arizona 85011, telephone (602) 241–2285.

The general notice shall read as follows: San Carlos Irrigation Project, O&M Assessment, Joint Works.

Pursuant to the Act of Congress approved June 7, 1924 (43 Stat. 476) and supplementary acts, the Repayment Contract of June 8, 1931, as amended, between the United States and San Carlos Irrigation and Drainage District, and in accordance with applicable provision of the Order of the Secretary of the Interior of June 15, 1938, the cost of the operation and maintenance of the Joint Works of the San Carlos Irrigation Project for Fiscal Year 1989 is estimated to be $3,121,360.00 and the rate of assessment for the said fiscal year and subsequent fiscal years until further notice is hereby fixed at $31.16 for each assessable acre of land.

Patrick A. Hayes,

Acting Area Director.

[FR Doc. 87–16117 Filed 7–15–87; 8:45 am]

BILLING CODE 4310–02–M

Bureau of Land Management

[CO–010–07–4333–11]

Temporary Closure of Certain Public Lands in the Little Snake Resource Area to Public Access; Sand Wash Basin; Moffat County, CO

AGENCY: Bureau of Land Management (BLM), Interior.

ACTION: Notice.

SUMMARY: Certain public lands in the Sand Wash Basin, Moffat County, Colorado, will be temporarily closed to public access from 4:00 a.m. to 10:00 p.m., September 6, 1987, and from 4:00 a.m. to 10:00 p.m., September 12, 1987, on and adjacent to the Craig Hi Desert 300 event and Sand Wash Hare and Hound event ORV race courses. These lands will be temporarily closed for reasons of public safety and resource protection. This temporary closure is made pursuant to 43 CFR 8364.

SUPPLEMENTARY INFORMATION: Access will be limited to race officials, entrants, support personnel, law enforcement personnel, BLM personnel and other authorized personnel as designated, during the period of the closure. The lands to be temporarily closed are further described as encompassing all or portions of T. 8 N., R. 97 W.; T. 8 N., R. 98 W.; T. 8 N., R. 99 W.; T. 9 N., R. 97 W.; T. 9 N., R. 98 W.; T. 9 N., R. 99 W.; T. 9 N., R. 100 W.; T. 10 N., R. 97 W.; T. 10 N., R. 98 W.; T. 10 N., R. 99 W.; T. 10 N., R. 100 W.; T. 11 N., R. 97 W.; T. 11 N., R. 98 W.; and T. 11 N., R. 99 W.

A map describing the specific areas to be temporarily closed is available from the Little Snake Resource Area Office, 1280 Industrial Avenue, Craig, Colorado, 81625, (303) 824–4441. Any person who fails to comply with this closure order issued under 43 CFR 8364 may be subject to the penalties provided for in 43 CFR 8360.0–7.

William J. Pulford,

District Manager.

July 9, 1987.

[FR Doc. 87–16089 Filed 7–15–87; 8:45 am]

BILLING CODE 4310–JB–M

[AA680–07–4132–02]

Information Collection Submitted for Review

The proposal for the collection of information listed below has been submitted to the Office of Management and Budget for approval under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35). Copies of the proposed information collection requirement and related forms and explanatory material may be obtained by contacting the Bureau's clearance officer at the phone number listed below. Comments and suggestions on the requirement should be made directly to the Bureau clearance officer and the Office of Management and Budget Interior Department Desk Office, Washington, DC 20503, telephone 202–395–7313.

Title: Application for Survey of Mining Claims

Abstract: The Mining Law of 1872 (30 U.S.C. 21 through 54) requires the issuance of a patent where the requirements of the law have been met and a mineral patent applied for. A mineral survey of the mining claims must be submitted as part of the mineral patent application. Form 3860–5 is an application for the surveying by a Cadastral Surveyor.

Bureau Form Number: 3860-5

Frequency: Respondent only fills out form when a mineral survey is made for a mineral patent and is non-recurring.

Description of Respondents: Respondents may range from an individual to a multi-national corporation.

Annual Responses: 75

Annual Burden Hours: 19

Bureau Clearance Officer: Richard Iovaine 202-653-8853

Dated: June 15, 1987.

George F. Brown,

Acting, Assistant Director for Energy and Mineral Resources.

[FR Doc. 87-16118 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-84-M

[UT-050-07-4410-08]

Availability of Draft Environmental Assessment (EA) Correction; Richfield, UT

AGENCY: Bureau of Land Mangement, Interior.

ACTION: Correction of availability of draft environmental assessment (EA) announcement published on July 8, 1987 (*52 FR 25638*) for comment period for the Mt. Ellen/Blue Hills Rehabilitation Project EA to end August 21, 1987, rather than 30 days after date of publication.

SUMMARY: The EA analyzes the impacts of the proposed action and alternatives to rehabilitate 167 acres of chaining within the Mt. Ellen/Blue Hills Wilderness Study Areas (UT-050-238).

The draft EA is available at the Richfield District Office, 150 East 900 North, Richfield, Utah 84701. For additional information contact Roy Edmonds, Environmental Coordinator, at the above address or call (801) 896-8221.

Donald L. Pendleton,

District Manager.

July 9, 1987.

[FR Doc. 87-16121 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-DQ-M

[NV-020-07-4321-12]

Hearing; Use of Helicopters and Motor Vehicles in Gathering and Transporting Wild Horses and Burros

SUMMARY: Notice is hereby given in accordance with Pub. L. 92-195, as amended by Pub. L. 94-579 and Pub. L. 95-514, a public hearing will be held on August 26, 1987. The public hearing will begin at 4:00 PM at the office of the Bureau of Land Management, 705 East Fourth Street, Winnemucca, Nevada.

The intent of the hearing is to obtain public input for all future use of helicopters and motor vehicles to gather and transport wild horses and burros. The area under consideration is the entire Winnemucca District and those lands administered by the Winnemucca District for the purpose of attaining and maintaining Appropriate Management Levels of wild horses and burros as set forth in the Land Use Plan.

The hearing is open to the public. Interested persons may make oral statements to the hearing moderator or file written statements for management consideration. Anyone wishing to make an oral statement should notify the District Manager, 705 East Fourth Street, Winnemucca, Nevada 89445, by August 19, 1987. Depending on the number of persons wishing to make oral statements, a per-person time limit may be established by the hearing moderator.

Summary minutes of the hearing will be maintained in the Winnemucca District Office of the BLM and available for public inspection during regular business hours within 30 days following the date of the hearing.

Dated: July 10, 1987.

Frank C. Shields,

District Manager, Winnemucca.

[FR Doc. 87-16122 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-HC-M

[OR-050-4322-02: GP7-231]

Prineville, or; District Grazing Advisory Board Meeting

Notice is hereby given in accordance with Pub. L. 92-463 of a meeting of the Prineville District Grazing Advisory Board to be held August 13, 1987.

The meeting will begin at 10:00 a.m. in the conference room of the Bureau of Land Management office located at 185 East 4th Street, Prineville, Oregon 97754.

The agenda will include the following items:

1. Review of proposed amendments to the grazing administration regulations.
2. Brothers/LaPine RMP (Grazing Issues).
3. Status of Oregon/Washington BLM Organization Study.
4. Tour of riparian areas within district.

The meeting and tour is open to the public. Anyone wishing to attend and/or make written or oral statements to the Board is requested to contact the District Manager at the above address, prior to August 3, 1987.

Summary minutes of the meeting will be available for review and reproduction within 30 days following the meeting.

Dated: July 8, 1987

Donald L. Smith,

Acting District Manager.

[FR Doc. 87-16125 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-33-M

[ID-050-07-4212-14]

Realty Action; Competitive Sale of Public Lands in Gooding and Jerome Counties, ID

AGENCY: Bureau of Land Management, Interior.

ACTION: Amend Notice of Realty Action (NORA) 51 FR 34151, dated September 25, 1986. Competitive Sale of Public Lands in Gooding and Jerome Counties, Iadho.

SUMMARY: The four parcels of public land were offered for sale seven times without any bids. Reappraisal procedures have established lower land values as follows:

Parcel	Fair market value
I-20409 T. 9 S., R. 17 E., B.M.; sec 20; NE¼NE¼; (40)	$8,000
I-20410 T. 9 S., R. 17 E., B.M.; sec 20; SE¼NE¼; (40)	8,000
I-20413 T. 6 S., R. 13 E., B.M.; sec 11; E½NW¼; (80)	12,000
I-20414 T. 6 S., R. 13 E., B.M.; sec 11; S½SW¼; (80)	12,000

DATE: July 9, 1987.

ADDRESS: BLM District Office, 400 West F Street, Shoshone, Idaho 83352.

SUPPLEMENTARY INFORMATION: The procedures identified in the NORA issued September 25, 1986, remain in effect except for value, date, and time changes. Sale reoffering will be on Friday, September 18, 1987, at 1:00 p.m. If no qualified bids are received at this offering, the parcels will be reoffered on the third Friday of each succeeding month at 1:00 p.m. until sold or the sale is suspended or cancelled.

For more information contact the Bennett Hills Resource Area Manager or Realty Specialist at the Shoshone District Office or phone (208) 886-2206. For a period of 45 days from the date of this Notice, interested parties may submit comments to the District Manager regarding the amended NORA. Comments will be evaluated and the amended NORA may be vacated, modified, or affirmed. In the absence of any objections, this amended NORA will become the final decision of the Department.

Jon H. Idso,

District Manager.

[FR Doc. 87-16126 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-GG-M

[ES-030-07-4212-11; ES-00157-013]

Realty Action; Recreation and Public Purposes Classification; Correction

SUMMARY: The legal descriptions in the Notice published in the **Federal Register** April 23, 1987, Vol. 52, No. 78, pgs. 13528 through 15329 should be corrected as follows:

Under 1. ES-36835, line 8 should be Sec. 4, *N ½ N ½*, Roscommon; and line 14 should be Sec. 18, *NW ¼ SW ¼*, Schoolcraft County, total of.

Under 2. ES-36836, the following should be added *T.41N., R.1E., Tract 38, Mackinac County, total of 0.01 acres.*

Comments: For a period of 45 days from the date of first publication of this notice, interested parties may submit comments to: District Manager, Milwaukee District Office, Bureau of Land Management, P.O. Box 631, Milwaukee, Wisconsin 53201-0631.

FOR FURTHER INFORMATION: Detailed information concerning this correction is available for review at the Milwaukee District Office, Suite 225, 310 West Wisconsin Avenue, Milwaukee, Wisconsin 53203, or by calling Duane Marti at (414) 291-4429.

Leon R. Kabat,

Acting District Manager.

[FR Doc. 87-16127 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-GJ-M

[UT-060-07-4212-24; U-61069]

Realty Action; Proposed Noncompetitive Agricultural Lease of Public Land in Grand County, UT

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of realty action, U-61069; proposed noncompetitive agricultural lease of public land in Grand County, Utah.

SUMMARY: Notice is given that the following described parcel of public land has been examined, and through the development of land-use planning decisions (based upon public input, resource considerations, regulations, and Bureau policies) the parcel is being considered for lease under section 302 of the Federal Land Policy and Management Act of 1976 (90 Stat. 2762; 43 U.S.C. 1732). The parcel includes approximately 1.8 acres of public land in Grand County, Utah within the following described lands:

Salt Lake Meridian, Utah

T. 24 S., R. 23 E.

Section 27, N2NESWNE.

The land has been fenced and farmed for alfalfa hay since at least 1971 as part of a field on private land. Professor Valley Ranch, Inc., the adjacent property owner, has proposed a renewable 20-year agricultural lease under U-61069 to resolve the agricultural trespass.

The parcel would be offered to the ranch for direct, noncompetitive lease at no less than fair market rental. The size and location of the parcel limit other potential uses or users. The lease would be subject to all valid existing rights.

SUPPLEMENTARY INFORMATION: For a period of 30 days from publication of this notice, interested parties may submit comments to the Moab District Manager, P.O. Box 970, Moab, Utah 84532. Objections will be reviewed by the State Director, who may sustain, vacate, or modify this realty action. In the absence of any objections, this realty action will become the final determination of the Department of the Interior.

FOR FURTHER INFORMATION CONTACT: Mary vonKoch, Realty Specialist, Grand Resource Area Office, Sand Flats Road, P.O. Box M, Moab, Utah 84532, (801) 259-8193, or Brad Groesbeck, District Realty Specialist, Moab District Office, 82 East Dogwood, P.O. Box 970, Moab, Utah 84532, (801) 259-6111.

Dated: July 7, 1987.

Gene Nodine,

District Manager.

[FR Doc. 87-16128 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-DQ-M

[CA-940-07-4520-12; Group 904]

Filing of Plat of Survey; Sacramento, CA

July 7, 1987.

1. This plat of the following described land will be officially filed in the California State Office, Sacramento, California immediately:

Mount Diablo Meridian, Lake County

T. 15 N., R. 8 W.

2. This plat representing the dependent resurvey of a portion of the west boundary, and a portion of the subdivisional lines, and the survey of the subdivision of sections 7, 18, and 19, Township 15 North, Range 8 West, Mount Diablo Meridian, California, under Group No. 904, was accepted June 2, 1987.

3. This plat will immediately become the basic record of describing the land for all authorized purposes. This plat has been placed in the open files and is available to the public for information only.

4. This plat was executed to meet certain administrative needs of the Mendocino National Forest.

5. All inquiries relating to this land should be sent to the California State Office, Bureau of Land Management, Federal Office Building, 2800 Cottage Way, Room E-2841, Sacramento, California 95825.

Herman J. Lyttge,

Chief, Public Information Section.

[FR Doc. 87-16123 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-40-M

[CA-940-07-4520-12; Group 879]

Filing of Plat of Survey; Sacramento, CA

July 7, 1987.

1. This plat of the following described land will be officially filed in the California State Office, Sacramento, California immediately:

Mount Diablo Meridian, Sacramento County

T. 10 N., R. 6 E

2. This plat representing the dependent resurvey of a portion of the subdivisional lines and certain mineral survey boundaries, and the retracement of Lot 4 in section 16, and the survey of the subdivision of sections 14, 15, and 16, Township 10 North, Range 6 East, Mount Diablo Meridian, California, under Group No. 879, was accepted June 25, 1987.

3. This plat will immediately become the basic record of describing the land for all authorized purposes. This plat has been placed in the open files and is available to the public for information only.

4. This plat was executed to meet certain administrative needs of the Plumas National Forest.

5. All inquiries relating to this land should be sent to the California State Office, Bureau of Land Management, Federal Office Building, 2800 Cottage Way, Room E-2841, Sacramento, California 95825.

Herman J. Lyttge,

Chief, Public Information Section.

[FR Doc. 87-16124 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-40-M

[CO-070-07-4322-10-2410]

Colorado; Grand Junction District Grazing Advisory Board Meeting

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of meeting of Grand Junction District Grazing Advisory Board.

SUMMARY: Notice is hereby given that a meeting of the Grand Junction District Grazing Advisory Board will be held on Wednesday and Thursday, August 12 and 13, 1987. The meeting will convene in the conference room at the Bureau of Land Management Office, 50629 Highway 6 and 24, Glenwood Springs, Colorado, at 8:30 a.m. on both August 12 and 13.

SUPPLEMENTARY INFORMATION: On August 12, the meeting will consist of a tour of some completed and proposed range improvement projects as well as a few grazing allotments near Gypsum, Colorado.

The agenda for the meeting on August 13 will include: (1) Introductions, (2) election of officers, (3) minutes of the previous meeting, (4) ranching for wildlife, (5) fencing highway rights-of-way, (6) Fish Park Pipeline Agreement, (7) land tenure adjustment and its relationship to grazing administration, (8) pooling of Advisory Board funds, (9) status of current project work, (10) proposed 8100 program for fiscal year 1988, (11) weed control and other new advisory board projects proposals, (12) public presentations, and (13) arrangements for the next meeting.

The meeting is open to the public. Interested person may make oral statements to the Board between 3:00 and 3:30 p.m. on August 13 or file written statements for the Board's consideration. Anyone wishing to make an oral statement must notify the District Manager, Bureau of Land Management, 764 Horizon Drive, Grand Junction, Colorado 81506, by August 11, 1987. Depending on the number of persons wishing to make oral statements, a per person time limit may be established by the District Manager. Those wishing to make the tour must furnish their own transportation, food and drink.

Minutes of the Board meeting will be maintained in the District Office and be available for public inspection and reproduction (during regular business hours) within thirty (30) days following the meeting.

Further information on the meeting may be obtained at the above address or by calling (303) 243-6552.

Dated: July 9, 1987.

Bruce Conrad,

District Manager, Grand Junction District.

[FR Doc. 87-16192 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-JB-M

Fish and Wildlife Service

Intent To Coordinate the Development of a National Recreational Fisheries Policy

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice.

SUMMARY: The Fish and Wildlife Service (Service) is coordinating the development of a National Recreational Fisheries Policy (Policy) through a public forum in which it is expected that members of the general public, Federal and State governments, Indian Tribes, and sport fishing groups will participate. The purpose of the Policy is to provide a unified set of national objectives and guiding principles for the conservation, management, and wish use of recreational fisheries and the resources on which they depend. The objectives and principles resulting from the public forum are intended to provide multilateral, uniform guidance for governmental (Federal, State, and local) and private sector entities in fulfilling their responsibilities.

FOR FURTHER INFORMATION CONTACT: Gary Edwards, Assistant Director—Fisheries, U.S. Fish and Wildlife Service, 18th and C Streets, NW., Washington, DC, (202) 343-6394.

SUPPLEMENTARY INFORMATION: The Fish and Wildlife Service believes that a national policy on recreational fisheries, such as has recently been promulgated by Canada and other countries, would be beneficial in the United States. The Service is facilitating the development of the Policy by a public forum in which representatives of interested parties, including the public-at-large, may participate. By letter, the Service has solicited participation by representatives of recreational fishing interest groups, tribal representatives, and State and Federal agencies. This Notice serves to inform other interested persons and parties of the initiative. Anyone interested in submitting comments or suggestions for the Policy may do so by writing to the Fish and Wildlife Service at the above address. A draft of the Policy will be published in the **Federal Register** for public review and comment at a later date. A final Policy is targeted for mid-1988.

Dated: July 7, 1987.

Frank Dunkle,

Director.

[FR Doc. 87-16088 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-55-M

Minerals Management Service

Outer Continental Shelf; Development Operations Coordination Document; Hall-Houston Oil Co.

AGENCY: Minerals Management Service, Interior.

ACTION: Notice of the receipt of a proposed Development Operations Coordination Document (DOCD).

SUMMARY: Notice is hereby given that Hall-Houston Oil Company has submitted a DOCD describing the activities it proposes to conduct on Leases OCS-G 6202, 6203, and 6206, Blocks A-172, A-173, and A-178, respectively, High Island Area, off-shore Texas. Proposed plans for the above area provide for the development and production of hydrocarbons with support activities to be conducted from an onshore base located at Sabine Pass, Texas.

DATE: The subject DOCD was deemed submitted on July 2, 1987.

ADDRESS: A copy of the subject DOCD is available for public review at the Public Information Office, Gulf of Mexico OCS Region, Minerals Management Service, 1201 Elmwood Park Boulevard, Room 114, New Orleans, Louisiana (Office Hours: 8 a.m. to 4:30 p.m., Monday through Friday).

FOR FURTHER INFORMATION CONTACT: Ms. Angie D. Gobert, Minerals Management Service, Gulf of Mexico OCS Region, Field Operations, Plans, Platform and Pipeline Section, Exploration/Development Plans Unit; Telephone (504) 736-2876.

SUPPLEMENTARY INFORMATION: The purpose of this Notice is to inform the public, pursuant to section 25 of the OCS Lands Act Amendments of 1978, that the Minerals Management Service is considering approval of the DOCD and that it is available for public review.

Revised rules governing practices and procedures under which the Minerals Management Service makes information contained in DOCDs available to affected States, executives of affected local governments, and other interested parties became effective December 13, 1979 (44 FR 53685). Those practices and procedures are set out in revised § 250.34 of Title 30 of the CFR.

Date: July 7, 1987.

J. Rogers Pearcy,

Regional Director, Gulf of Mexico OCS Region.

[FR Doc. 87-16091 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-MR-M

Outer Continental Shelf; Development Operations Coordination Document; Tenneco Oil Exploration and Production

AGENCY: Minerals Management Service, Interior.

ACTION: Notice of the receipt of a proposed Development Operations Coordination Document (DOCD).

SUMMARY: Notice is hereby given that Tenneco Oil Exploration and Production has submitted a DOCD describing the activities it proposes to conduct on Leases OCS-G 1149 and 2873, Blocks 250 and 251, Vermilion Area, offshore Louisiana. Proposed plans for the above area provide for the development and production of hydrocarbons with support activities to be conducted from an onshore base located at Intracoastal City, Louisiana.

DATE: The subject DOCD was deemed submitted on July 6, 1987.

ADDRESS: A copy of the subject DOCD is available for public review at the Public Information Office, Gulf of Mexico OCS Region, Minerals Management Service, 1201 Elmwood Park Boulevard, Room 114, New Orleans, Louisiana (Office Hours: 8 a.m. to 4:30 p.m., Monday through Friday).

FOR FURTHER INFORMATION CONTACT: Michael J. Tolbert; Minerals Management Service, Gulf of Mexico OCS Region, Field Operations, Plans, Platform and Pipeline Section, Exploration/Development Plans Unit; Telephone (504) 736-2867.

SUPPLEMENTARY INFORMATION: The purpose of this Notice is to inform the public, pursuant to section 25 of the OCS Lands Act Amendments of 1978, that the Minerals Management Service is considering approval of the DOCD and that it is available for public review.

Revised rules governing practices and procedures under which the Minerals Management Service makes information contained in DOCDs available to affected States, executive of affected local governments, and other interested parties became effective December 13, 1979 (44 FR 53685). Those practices and procedures are set out in revised § 250.34 of Title 30 of the CFR.

Date: July 7, 1987.

J. Rogers Pearcy,

Regional Director, Gulf of Mexico OCS Region.

[FR Doc. 87-16092 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-MR-M

Information Collection Submitted to the Office of Management and Budget for Review Under the Paperwork Reduction Act

The proposal for the collection of information listed below has been submitted to the Office of Management and Budget for approval under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35). Copies of the proposed collections of information and related forms and explanatory material may be obtained by contacting the Bureau's Clearance Officer at the telephone number listed below. Comments and suggestions on the requirements should be made within 30 days directly to the Bureau Clearance Officer and to the Office of Management and Budget Interior Department Desk Officer, Washington, DC 20503, telephone (202) 395-7313, with copies to Gerald D. Rhodes, Chief, Branch of Rules, Orders, and Standards; Offshore Rules and Operations Division; Mail Stop 646, Room 6A110; Minerals Management Service; 12203 Sunrise Valley Drive; Reston, Virginia 22091.

Title: Oil and Gas Operations in the Outer Continental Shelf (OCS), 30 CFR Part 250 (4 submissions—see individual titles below)

Abstract: Respondents submit the following forms to the Minerals Management Service's (MMS) District Supervisors to be evaluated and approved or disapproved for the adequacy of the equipment, materials, and/or procedures which the lessee plans to use to safely perform drilling, well-completion, well-workover, and well-abandonment operations:

1. Form MMS-331C, Application for Permit to Drill, is used to obtain permission to initiate the drilling of a well and is the first significant information placed in a well file.

2. Form MMS-331, Sundry Notices and Reports on Wells, is used to obtain prior approval for all intervening actions between the initial drilling and the subsequent abandonment of a well, including deepening and plugging back. It is used as a subsequent report of all operations other than completion, recompletion, or abandonment.

3. Form MMS-330, Well (Re)Completion Report, is used to report when a well is completed or recompleted in a given interval stating the condition of the wellbore until such time that the well is recompleted or abandoned.

4. Form MMS-332, Notice of Intent/Report of Well Abandonment, is used to obtain prior approval for, and subsequently to report, the abandonment of a well. It will be the last significant information placed in a well file since it results in the file being closed.

These forms are necessary to enable MMS to ensure safety of operations, protection of the human, marine, and coastal environments, conservation of the natural resources in the OCS, prevention of waste, and protection of correlative rights with respect to oil and gas operations in the OCS.

Bureau Form Number:

1. Form MMS-331C, Application for Permit to Drill
   Annual Responses: 5,566
   Annual Burden Hours: 2,783
2. Form MMS-331, Sundry Notices and Reports on Wells
   Annual Responses: 1,130
   Annual Burden Hours: 565
3. Form MMS-330, Well (Re)Completion Report
   Annual Responses: 2,500
   Annual Burden Hours: 2,500
4. Form MMS-332, Notice of Intent/Report of Well Abandonment
   Annual Responses: 1,650
   Annual Burden Hours: 825

Frequency: On occasion

Description of Respondents: OCS oil and gas lessees

Bureau Clearance Officer; Dorothy Christopher, (703) 435-6213

Dated: July 1, 1987.

John B. Rigg,

Associate Director for Offshore Minerals Managment.

[FR Doc. 87-16129 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-MR-M

National Park Service

Revision of Park Boundaries; Delaware Water Gap National Recreation Area, New Jersey and Pennsylvania

AGENCY: National Park Service, Interior.

ACTION: Notice of revision of park boundaries.

SUMMARY: With this Notice, the National Park Service is notifying the public of adjustments of the boundaries of the Recreation Area to include certain lands within the boundaries of the Recreation Area.

FOR FURTHER INFORMATION CONTACT: Superintendent Albert A. Hawkins, Delaware Water Gap National

Recreation Area, Telephone 717-588-6637.

SUPPLEMENTARY INFORMATION: Section 3(b) of Pub. L. 89-158 of the 89th Congress enacted September 1, 1965 (79 Stat. 612), as amended, authorized adjustments of the boundaries of the Delaware Water Gap National Recreation Area by publication of the amended description thereof in the **Federal Register.**

In a subsequent Notice of Establishment published in the **Federal Register,** Vol. 42, No. 109, Tuesday, June 7, 1977, the Secretary of the Interior gave notice of the establishment of the Recreation area. In this notice, he stated that "adjustments may be subsequently made in the boundaries of the area by publication of the amendments to the boundary description thereof in the **Federal Register**" as provided in the authorizing act.

Notice is hereby given that the boundary of the Delaware Water Gap National Recreation Area has been revised pursuant to the above Act, to include portions of the Erie Lackawana Railroad right-of-way described as follows:

1. Old Road Industrial Tract—Valuation Map Nos. V21/M.L. 3, 4, and 5 between M.P. 83.475 (Upper Mt. Bethel Twp.) and M.P. 85.6 (Slateford Jct.) containing 39 acres, more of less.
2. Scranton Branch—Valuation Map Nos. V21/M.L. 5 thru V21/M.L. 31 between M.P. 75.1 (Slateford Jct.) and M.P. 101.0 (Mt. Pocono) containing 390 acres, more or less.

A portion of the above right-of-way containing approximately 63 acres, is presently within the boundaries of the Recreation Area leaving a net increase of 366 acres, more or less, to the total acreage of the Recreation Area.

William Penn Mott, Jr.,

Director.

July 10, 1987.

[FR Doc. 87-16083 Filed 7-15-87; 8:45 am]

BILLING CODE 4310-70-M

INTERNATIONAL TRADE COMMISSION

[Investigation No. 701-TA-249-1 (Final)]

Certain Light Iron Construction Castings From Brazil

AGENCY: United States International Trade Commission.

ACTION: Institution of a final countervailing duty investigation and scheduling of a hearing to be held in connection with the investigation.

SUMMARY: The Commission hereby gives notice of the institution of final countervailing duty investigation No. 701-TA-249-1 (Final) under section 705(b) of the Tariff Act of 1930 (19 U.S.C. 1671d(b)) to determine whether an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Brazil of light iron construction castings,[1] provided for in item 657.09 of the Tariff Schedules of the United States, that have been found by the Department of Commerce, in a preliminary determination, to be subsidized by the Government of Brazil. Commerce will make its final subsidy determination in this investigation on or before August 31, 1987, and the Commission will make its final injury determination by October 16, 1987 (see sections 705(a) and 705(b) of the act (19 U.S.C. 1671d(a) and 1671d(b))).

For further information concerning the conduct of this investigation, hearing procedures, and rules of general application, consult the Commission's Rules of Practice and Procedure, Part 207, Subparts A and C (19 CFR Part 207), and Part 201, Subparts A through E (19 CFR Part 201).

EFFECTIVE DATE: June 19, 1987.

FOR FURTHER INFORMATION CONTACT: Martha Mitchell (202-523-0291), NW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-724-0002. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-523-0161.

SUPPLEMENTARY INFORMATION:

Background

This investigation is being instituted as a result of an affirmative preliminary determination by the Department of Commerce that certain benefits which constitute subsidies within the meaning of section 701 of the act (19 U.S.C. 1671) are being provided to manufacturers, producers, or exporters in Brazil of certain light iron construction castings (52 FR 23322, June 19, 1987). The investigation was requested in a petition filed on May 13, 1985, by the Municipal Castings Fair Trade Council, a trade association representing 15 domestic producers of iron construction castings. In response to that petition, the Commission conducted a preliminary countervailing duty investigation and, on the basis of information developed during the course of that investigation, determined that there was no reasonable indication that an industry in the United States was materially injured or threatened with material injury, or that the establishment of an industry in the United States was materially retarded,[2] by reason of imports from Brazil of certain light iron construction castings provided for in TSUS item 657.09, which were alleged to be subsidized by the Government of Brazil (50 FR 27498, July 3, 1985).

On February 14, 1986, the United States Court of International Trade issued an order and opinion which remanded the Commission's preliminary determination in Iron Construction Castings from Brazil (Light), Inv. No. 701-TA-249 (Preliminary) for redetermination within 45 days.[3] In accordance with the court order, on March 31, 1986, the Commission transmitted to Commerce its affirmative determination that there is a reasonable indication that a domestic industry in the United States is matarially injured or threatened with material injury by reason of imports of certain light iron construction castings which were allegedly being subsidized by the Government of Brazil. The Commission's determination was published on April 9, 1986, in the **Federal Register** (51 FR 12217). On March 31, 1987, the Court of Appeals for the Federal Circuit issued its decision affirming the Court of International Trade's decision in Bingham & Taylor Division, Virginia Industries, Inc., et al. v. United States.

Participation in the Investigation

Persons wishing to participate in this investigation as parties must file and entry of appearance with the Secretary to the Commission, as provided in § 201.11 of the Commission's rules (19 CFR 201.11), not later than twenty-one (21) days after the publication of this notice in the **Federal Register.** Any entry of appearance filed after this date will be referred to the Chairman, who will determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

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[1] "Light iron construction castings" include valve, service and meter boxes that are employed in utility systems and are placed below the ground to encase water or gas valves and meters.

[2] Chairman Stern and Commissioner Eckes Found a reasonable indication of a threat of material injury to the light iron construction castings domestic industry.

[3] Bingham & Taylor Division, Virginia Industries, Inc., et al. v. United States, 627 F. Supp. 793 (CIT 1986).

Service List

Pursuant to § 201.11(d) of the Commission's rules (19 CFR 201.11(d)), the Secretary will prepare a service list containing the names and addresses of all persons, or their representatives, who are parties to this investigation upon the expiration of the period for filing entries of appearance. In accordance with §§ 201.16(c) and 207.3 of the rules (19 CFR 201.16(c) and 207.3), each document filed by a party to the investigation must be served on all other parties to the investigation (as identified by the service list), and a certificate of service must accompany the document. The Secretary will not accept a document for filing without a certificate of service.

Staff Report

A public version of the prehearing staff report in this investigation will be placed in the public record on August 31, 1987, pursuant to § 207.21 of the Commission's rules (19 CFR 207.21).

Hearing

The Commission will hold a hearing in connection with this investigation beginning at 9:30 a.m. on September 15, 1987, at the U.S. International Trade Commission Building, 701 E Street NW., Washington, DC. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission not later than the close of business (5:15 p.m.) on August 31, 1987. All persons desiring to appear at the hearing and make oral presentations should file prehearing briefs and attend a prehearing conference to be held at 9:30 a.m. on September 3, 1987, in room 117 of the U.S. International Trade Commission Building. The deadline for filing prehearing briefs is September 10, 1987.

Testimony at the public hearing is governed by § 207.23 of the Commission's rules (19 CFR 207.23). This rule requires that testimony be limited to a nonconfidential summary and analysis of material contained in prehearing briefs and to information not available at the time the prehearing brief was submitted. Any written materials submitted at the hearing must be filed in accordance with the procedures described below and any confidential materials must be submitted at least three (3) working days prior to the hearing (see § 201.6(b)(2) of the Commission's rules (19 CFR 201.6(b)(2))).

Written Submissions

All legal arguments, economic analyses, and factual materials relevant to the public hearing should be included in prehearing briefs in accordance with § 207.22 of the Commission's rules (19 CFR 207.22). Posthearing briefs must conform with the provisions of section 207.24 (19 CFR 207.24) and must be submitted not later than the close of business on September 22, 1987. In addition, any person who has not entered an appearance as a party to the investigation may submit a written statement of information pertinent to the subject of the investigation on or before September 22, 1987.

A signed original and fourteen (14) copies of each submission must be filed with the Secretary to the Commission in accordance with § 201.8 of the Commission's rules (19 CFR 201.8). All written submissions except for confidential business data will be available for public inspection during regular business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary to the Commission.

Any business information for which confidential treatment is desired must be submitted separately. The envelope and all pages of such submissions must be clearly labeled "Confidential Business Information." Confidential submissions and requests for confidential treatment must conform with the requirements of § 201.6 of the Commission's rules (19 CFR 201.6)

Authority: This investigation is being conducted under authority of the Tariff Act of 1930, title VII. This notice is published pursuant to § 207.20 of the Commission's rules (19 CFR 207.20).

By order of the Commission.

Kenneth R. Mason,

Secretary.

Issued: July 7, 1987.

[FR Doc. 87-16082 Filed 7-15-87; 8:45 am]

BILLING CODE 7020-02-M

INTERSTATE COMMERCE COMMISSION

[Ex Parte No. MC-19 (Sub-No. 37)]

Dispute Settlement Program Application No. 2; American Movers Conference

Decided: July 8, 1987.

The Commission approved the American Movers Conference's (AMC'S) Dispute Settlement Program Application by decision of December 23, 1981. This application was filed pursuant to the Household Goods Act of 1980, 49 U.S.C. section 11711, and the policies established by the Commission in Ex Parte MC-19 (Sub-No. 37).

The AMC proposes to amend Rule 5 of the program to reflect an increase from 25 to 33 in the number of American Arbitration Association regional offices to which it may assign the administration of arbitration proceedings.

It is also proposing to amend Rule 24 to reflect a change in the American Arbitration Association's charge for an optional oral hearing from $50.00 to $100.00 payable by each party.

The AMC is requesting approval of these rule changes and authority to make conforming amendments to its summary and disclosure statement which must be given to household goods shippers by carriers participating in the progam.

In addition, the AMC proposes to modify the summary and disclosure statement in two other respects. It plans to insert a sentence immediately following the heading When Would I Use This Arbitration Program to read: "This program was established for the settlement of disputes involving loss and damage claims on interstate shipments of household goods." The AMC also plans to change the heading How Do I Start an Arbitration? to "How is an Arbitration Case Opened With the American Arbitration Association?"

The stated purposes of these modifications are: (1) To clarify, but not necessarily limit, the primary scope of the Program to claims for loss or damage to household goods; and (2) to establish greater shipper certainty as to when the official commencement of an arbitration proceeding occurs.

We Find

The amendments to Rule 5 and 24 and corresponding changes in the summary and disclosure statement are ministerial in character and give effect to factual changes that have occurred since the Program's last review approximately five and one half years ago.

Moreover, the changes planned by the AMC is the summary and disclosure statement regarding the use and initiation of arbitration are in harmony with Program Rules 1 and 7, respectively. They represent clarification of these rules without substantive changes.

It is Ordered

Dispute Settlement Program No. 2, as amended, is approved. Revisions to the summary and disclosure statement as shown in the Appendix to this decision are authorized.

Note.—This action will not significantly affect either the quality of the human environment or conservation.

By the Commission, Insurance Board, members Gaillard, Love and Hardy.

Noreta R. McGee,

Secretary.

Appendix—Arbitration Information Booklet

Your mover and the American Movers Conference are making available to you an arbitration program that is a less costly alternative to the court system in settling disputes involving loss and damage claims. This booklet will explain what arbitration is and how the program works. It is being given to you before your move so that you will be aware of the program and your rights when using it in the unlikely event that the need will arise.

American Movers Conference Household Goods Dispute Settlement Program

Administered by the American Arbitration Association

What is Arbitration?

Arbitration is a substitute for going to court to settle disputes. Under arbitration procedures, two parties unable to resolve their difference submit their dispute to an impartial third person for a final determination. The proceeding is governed by rules and procedures agreed upon in advance by both parties.

Who Sponsors This Program?

The American Movers Conference (AMC) is a national trade association representing carriers and agents of the household goods moving industry. AMC is sponsoring this dispute settlement/arbitration program so that its member carriers may offer an effective, fair and expeditious way to solve disagreements in connection with loss and damage claims on household goods.

Who Actually Administers the Arbitration Procedures?

The program will be administered by the American Arbitration Association (AAA), an independent nongovernmental organization, not affiliated with either the American Movers Conference or its member household goods carriers. The AAA was chosen to run the program because it is recognized as the leading independent arbitration authority in the country. It is a public service, non-profit agency with 33 offices nationwide, which is dedicated exclusively to the resolution of disputes of all kinds.

Has This Program Been Approved by an Outside Agency?

The Interstate Commerce Commission (ICC), which regulates the interstate operations of household goods carriers, has approved this program. By law, it is responsible for overseeing the functioning of any approved dispute settlement program.

What are the Legal Effects of an ICC-Approved Program?

The Household Goods Transportation Act was passed by Congress on October 15, 1980. It provided guidelines to permit carriers to establish dispute settlement/arbitration programs, subject to ICC approval. In addition, the Act contains certain provisions relating to the legal effects on consumers and carriers. You should carefully consider the legal effects of the following provisions of the Act before you decide whether or not to use the program:

1. To encourage carriers to participate in arbitration programs, the Household Goods Transportation Act of 1980, provides that where a court action is instituted to resolve a dispute between a shipper (consumer) and a carrier concerning the transportation of household goods, reasonable attorney fees must be awarded the shipper

If the shipper submitted the claim to the carrier within 120 days after the date the shipment was delivered or the day on which the delivery was scheduled, whichever is later,

And if the shipper prevailed in the court action. In addition, one of the following must be applicable:

a. There was no ICC-approved dispute settlement program available for use by the shipper to resolve the dispute.

b. A decision resolving the dispute was not rendered within 60 days of receipt of written notification of the dispute or an extension thereof as provided under the rules of the program.

c. A court action is instituted to enforce a decision rendered under the dispute settlement program.

2. Additionally, to discourage shippers from filing non-meritorious claims in court, the Household Goods Transportation Act provides that a carrier may be awarded reasonable attorney fees where a shipper has brought court action in "bad faith," either—

a. After a decision has been issued under an approved dispute settlement program; or

b. After a shipper has instituted a proceeding under such a program but before a decision resolving the dispute is rendered, provided the dispute is finally resolved within the 60-day period allowed or a valid extension is granted as stipulated by the program.

When Would I use This Arbitration Program?

This program was established for the settlement of disputes involving loss and damage claims on interstate shipments of household goods. Under ICC regulations, a claim for loss and damage to your household goods during a move must be filed with the carrier within nine months after delivery. The carrier must acknowledge any claim within 30 days of receipt, and within 120 days must deny or make an offer in settlement of your claim. If you and the carrier cannot resolve a dispute in connection with your claim, you may request arbitration procedures administered by the AAA. First, however, be sure you have exhausted your remedies through the regular claims process and the carrier has made its final offer.

How Does the Arbitration Program Work?

This arbitration is voluntary and optional, and neither the carrier nor you, the shipper, is committed to arbitrate a claim dispute until both complete and sign the prescribed forms to initiate the procedures. Either you or the carrier may request arbitration from the AAA. However, neither party may force the other to arbitrate a disagreement. Arbitration is voluntary, and each party must agree to it. If a carrier does not agree to take a dispute to arbitration, the reason for that refusal will be clearly stated.

After both carrier and shipper agree to arbitrate and sign the official "Submission to Arbitrate" form, they appoint the AAA administrator of the arbitration. The AAA then appoints an arbitrator from its national panel of arbitrators who will render a decision that is legally binding on both carrier and shipper. AAA arbitrators are trained and experienced volunteers from all walks of life. They are never in any way connected with either party in a dispute they are arbitrating.

The arbitrator's decision is based on all statements of fact and documents relevant to the claim. The standard procedure is "desk arbitration" where the arbitrator conducts the arbitration on the basis of written documents submitted by both parties. Prior to the arbitration, both parties are provided with copies of everything that the arbitrator will base his decision on.

An optional oral hearing of the evidence in a dispute can also be arranged at an additional cost where both carrier and shipper agree on the date, time and location.

How much Does Arbitration Cost?

AAA arbitrators are not paid for settling disputes under this program. The AAA does charge an administrative filing fee to institute the standard "desk arbitration" procedures. The fee is paid by the carrier when it agrees to a shipper's request to take a claim dispute to arbitration. For the optional oral hearing, the AAA charges an additional $100 each to both carrier and shipper.

What Can an Arbitrator Award and What is the Legal Status of that Decision?

The arbitrator may grant any remedy or relief the arbitrator feels is just and equitable and within the scope of the agreement between the parties and the rules of the program. In general, the amount of any award may not exceed the carrier's liability under the bill of lading. In reaching the decision, the arbitrator considers applicable federal and state law, ICC approved tariff rules, as well as applicable usage and practices of the moving industry. Under the rules of the program, the arbitrator does not have jurisdiction to consider claims for consequential or incidental damages, mental anguish, loss of wages, punitive damages, alleged fraud, violations of the law or any claim which cannot be arbitrated under the law, such as allegations of criminal activity. The arbitrator's decision is legally binding on both parties and can be enforced in any court having jurisdiction over the dispute.

Under rules of the program, there is a limited right to appeal on the arbitrator's award, however, courts will usually not revise findings of fact or law in a binding arbitration award.

How Do I Request Arbitration?

A shipper may request arbitration by writing to the American Movers Conference, ATTN: Dispute Settlement Program, . Your letter of notification to the American Movers Conference must be sent within 60 days after a final offer or denial on your claim has been made in writing by the carrier.

In addition to your name, address, and phone number, the following information should be included in your letter to the American Movers Conference: the name the shipper moved under, identification number of shipment, dates and location of pickup and delivery, and any assigned loss and damage claim number. The American Movers Conference will promptly send written notice of your request for arbitration to the carrier. The carrier must then respond to you within 15 days by either sending three signed copies of the required forms and the program rules to you, or by advising you in writing that it declines to arbitrate the dispute. If a carrier does not agree to take a disput to arbitration, the reason for the refusal will be clearly stated.

How is an Arbitration Case Opened With the American Arbitration Association?

You have 15 days from the date of receipt of the forms and information from the carrier to elect to initiate the actual procedures. The shippers accomplishes this by completing and signing the "Submission to Arbitrate" and "Claimant Questionnaire" forms, and mailing them with other supporting documents to:

American Arbitration Assocation
ATTN: AMC Household Goods Dispute
Settlement Program
140 West 51st Street
New York, 10020

How Long Before a Decision is Announced?

The arbitrator will make an award in each case no later than 60 days after receipt of all necessary forms and documents, or in the event of an oral hearing, within 30 days after the arbitrator concludes the hearing. The arbitrator may, however, extend the time period in order to obtain additional information to resole the dispute.

How Do I Obtain More Information About This Arbitration Program?

You may request program rules and sample forms from either the carrier or the American Movers Conference.

[FR Doc. 86-16130 Filed 7-15-87; 8:45am]

BILLING CODE 7035-01-M

NATIONAL FOUNDATION ON THE ARTS AND THE HUMANITIES

Humanities Panel Meetings

AGENCY: National Endowment for the Humanities.

ACTION: Notice of meetings.

SUMMARY: Pursuant to the provisions of the Federal Advisory Committee Act (Pub. L. 92-463, as amended), notice is hereby given that the following meetings of the Humanities Panel will be held at the Old Post Office, 1100 Pennsylvania Avenue, NW., Washington, DC 20506.

FOR FURTHER INFORMATION CONTACT: Stephen J. McCleary, Advisory Committee Management Officer, National Endowment for the Humanities, Washington, DC 20506; telephone 202/786-0322.

SUPPLEMENTARY INFORMATION: The proposed meetings are for the purpose of panel review, discussion, evaluation and recommendation on applications for financial assistance under the National Foundation on the Arts and the Humanities Act of 1965, as amended, including discussion of information given in confidence to the agency by grant applicants. Because the proposed meetings will consider information that is likely to disclose: (1) Trade secrets and commercial or financial information obtained from a person and privileged or confidential; (2) information of a personal nature the disclosure of which would constitute a clearly unwarranted invasion of personal privacy; or (3) information the disclosure of which would significantly frustrate implementation of proposed agency action, pursuant to authority granted me by the Chairman's Delegation of Authority to Close Advisory Committee meetings, dated January 15, 1978, I have determined that these meetings will be closed to the public pursuant to subsections (c)(4), (6) and (9)(B) of section 552b of Title 5, United States Code.

1. *Date:* August 3-4, 1987
   Time: 8:30 a.m. to 5:00 p.m.
   Room: 430
   Program: This meeting will review applications from research organizations, submitted to the Office of Challenge Grants, for projects beginning after December 1, 1987.

1. *Date:* August 5, 1987
   Time: 8:30 a.m. to 5:30 p.m.
   Room: 316-2
   Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in Religious Studies, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

1. *Date:* August 11, 1987
   Time: 8:30 a.m. to 5:30 p.m.
   Room: 316-2
   Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in American Literature and American Studies, submitted to the Divison of Fellowships and Seminars, for projects beginning after January 1, 1988.

1. *Date:* August 12, 1987
   Time: 8:30 a.m. to 5:30 p.m.
   Room: 316-2
   Program: This meeting will review

Fellowships for College Teachers and Independent Scholars applications in Philosophy, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

1. *Date:* August 13, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in Art History, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

6. *Date:* August 14, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in Anthropology, Sociology, Psychology, and Education, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

7. *Date:* August 17, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in Classical, Romance, and Comparative Literatures, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

8. *Date:* August 18, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in European History, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

9. *Date:* August 19, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in Political Science, Law, and Economics, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

10. *Date:* August 20, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in American History, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

11. *Date:* August 21, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in English Literature, submitted to the Division of Fellowships and Seminars, for projects beginning after january 1, 1988.

12. *Date:* August 24, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for College Teachers and Independent Scholars applications in German, Slavic, and Oriental Literatures; Theater and Film; Linguistics, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

13. *Date:* August 3, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in Philosophy, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

14. *Date:* August 3, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for University Teachers applications in Religious Studies, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

15. *Date:* August 4, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in American History, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

16. *Date:* August 10, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in Political Science, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

17. *Date:* August 10, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 316–2
Program: This meeting will review Fellowships for University Teachers and Fellowships for College Teachers and Independent Scholars applications in Latin American and Non-Western History, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

18. *Date:* August 11, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in European History, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

19. *Date:* August 12, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 415
Program: This meeting will review Fellowships for University Teachers applications in British Literature, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

20. *Date:* August 12, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in Comparative Literature; German, Slavic and Non-Western Literature; Literary Theory and Criticism; Linguistics, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

21. *Date:* August 14, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in Romance and Classical Languages and Literature, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

22. *Date:* August 17, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers and Fellowships for College Teachers and Independent Scholars applications in Music and Dance

History and Criticism, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

23. *Date:* August 21, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in Anthropology, Sociology and Psychology, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

24. *Date:* August 24, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in American Literature; American Studies and Film, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

25. *Date:* August 25, 1987
Time: 8:30 a.m. to 5:30 p.m.
Room: 315
Program: This meeting will review Fellowships for University Teachers applications in Art History and Criticism, submitted to the Division of Fellowships and Seminars, for projects beginning after January 1, 1988.

Stephen J. McCleary,
Advisory Committee, Management Officer.

[FR Doc. 87-16114 Filed 7-15-87; 8:45 am]

BILLING CODE 7536-01-M

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-443-OL, 50-444-OL, ASLBP No. 82-471-02-OL]

Public Service Co. of New Hampshire, et al.; Seabrook Station, Units 1 and 2; (Offsite Emergency Planning) Hearing.

Atomic Safety and Licensing Board; Before Administrative Judges: Helen F. Hoyt, Chairperson, Gustave A Linenberger, Jr., Dr. Jerry Harbour.

July 9, 1987.

The schedule for Seabrook hearings at the auditorium in the Boston Federal Office Building, 10 Causeway Street, Boston, Massachusetts, is as follows:

September 28–October 2, 1987
9:00 a.m.–5:00 p.m. EST
October 12–October 16, 1987
9:00 a.m.–5:00 p.m. EST
October 26–October 30, 1987
9:00 a.m.–5:00 p.m. EST
November 9–November 13, 1987
9:00 a.m.–5:00 p.m. EST
November 16–November 20, 1987
9:00 a.m.–5:00 p.m. EST

For the Atomic Safety and Licensing Board.

Helen F. Hoyt,
Chairperson, Administrative Judge.

[FR Doc. 87-16153 Filed 7-15-87; 8:45 am]

BILLING CODE 7590-01-M

[Docket No. 030-13313, License No. 21-17781-01 and Docket No. 030-29339, License No. 21-24745-01, EA 86-139]

Highland Waterford Medical Services, 4000 Highland Road, Pontiac, Michigan; Confirmatory Order Modifying License

I

Dr. Kedarnath B. Joshi, M.D., 20331 Farmington Road, Livonia, Michigan, is the holder of NRC License No. 21-17781-01, which authorizes the use of Groups I, II, and III (except generators) of byproduct material for diagnostic studies at his private practice clinics in Michigan at 20331 Farmington Road, Livonia; 530 W. Huron, Pontiac; and 22250 Providence Drive, Southfield. The license was originally issued on December 15, 1977, was amended in its entirety on March 1, 1983, and is due to expire on March 31, 1988. Highland Waterford Medical Services (HWMS) is the holder of Byproduct Material License No. 21-24745-01, which authorizes the use of Groups I and II for diagnostic studies. The license was originally issued on June 30, 1986 and is due to expire on July 31, 1991.

II

On June 12, 1986, prior to issuance of the HWMS license, the NRC Region III staff received allegations that Dr. Joshi was engaging in activities at HWMS that were in violation of NRC regulatory requirements. A special inspection was initiated and conducted from June 21 through July 1, 1986. During the inspection the NRC determined that Dr. Joshi performed nuclear medicine procedures at Highland Waterford Medical Services in Pontiac, Michigan, from May 21 through June 11, 1986 although his license did not authorize use at that location. The HWMS facility had been an authorized address of use for another nuclear medicine group which had ceased operations at that location on May 15, 1986. Prior to beginning operations at the HWMS facility and on several occasions during the period of unauthorized use, Dr. Joshi was informed by his technologists and two consultants (acting independently of each other) that authorized use at HWMS would require a license amendment.

Based on the results of the special inspection, an Order to Show Cause Why License Should Not be Revoked (Order) was issued on December 23, 1986. The Order was issued primarily because the NRC staff believed Dr. Joshi continued to use licensed material at a site not authorized by his license after he was reminded on three separate occasions that such use violated NRC requirements. In an answer dated January 15, 1987 and in an affidavit dated May 4, 1987, Dr. Joshi responded to the Order. In these responses, Dr. Joshi offered information to support his view of the facts and to mitigate the significance of the facts as stated by the NRC in the Order. In addition, Dr. Joshi proposed hiring a consultant to perform audits for each facility licensed under License No. 21-17781-01 on a monthly basis for four months, then bi-monthly for four months, and quarterly thereafter. Dr. Joshi further volunteered to adopt all recommendations of the consultant in order to assure complete compliance with NRC regulations. In a recent telephone conversation with counsel for the NRC staff, counsel for Dr. Joshi has confirmed Dr. Joshi's continued willingness to hire a consultant in accordance with his earlier proposal and with section III of this Order.

On the basis of an evaluation of Dr. Joshi's responses, I have determined that: (1) Dr. Joshi has shown adequate cause why License No. 21-17781-01 should not be revoked and (2) License No. 21-24745-01 should not be modified to prohibit Dr. Joshi from serving in any capacity involving the performance or supervision of licensed activities. I have further determined that License No. 21-1778-01 should be modified to require implementation of the proposed improvements as set forth in Section III below. This decision is based upon a determination that Dr. Joshi will be taking an increased personal interest in assuring that his activities are conducted in compliance with NRC requirements and that the specific plans described in Dr. Joshi's responses, including the performance of audits by an independent consultant, should be adequate to provide assurance that Dr. Joshi will conduct future activities in compliance with NRC requirements.

III

In view of the foregoing and pursuant to sections 81, 161b, 161i, and 161o of the Atomic Energy Act of 1954, as amended, the Commission's regulations in 10 CFR 2.202 and Parts 30 and 35, *It is hereby ordered that:*

A. The Order to show Cause Why License Should Not Be Revoked, dated December 23, 1986, is hereby rescinded.

B. Dr. Joshi shall have compliance audits conducted on a monthly basis for four months, then bimonthly for four months, and quarterly thereafter for each facility licensed under License No. 21-17781-01. These audits shall be performed by an independent consultant approved by the Regional Administrator, NRC Region III.

C. The initial audit shall be completed no later than August 1, 1987. Within thirty days after each audit, a written report of the audit findings shall be sent to the NRC Region III Regional Adminstrator at the same time it is sent to the licensee.

D. Within sixty days of receipt of each of the audit reports, Dr. Joshi shall submit a report to the Region III Regional Administrator describing the corrective actions to be taken to implement the audit recommendations or provide justification for alternative corrective action. This report shall also include a schedule for completion of the corrective action for each audit recommendation.

E. The NRC Region III Administrator may relax or terminate any of the preceding conditions for good cause shown.

Dated at Bethesda, Maryland, this 10th day of July 1987.

For the Nuclear Regulatory Commission.

James M. Taylor,

Deputy Executive Director for Regional Operations.

[FR Doc. 87-16149 Filed 7-15-87; 8:45 am]

BILLING CODE 7590-01-M

DEPARTMENT OF TRANSPORTATION

[Docket 44973]

Aviation; Assignment of Proceeding; Reporting Violations Enforcement Proceeding; Air Nevada Airlines, Inc.

Served: July 10, 1987.

This proceeding has been assigned to Chief Administrative Law Judge William A. Kane, Jr. Future communications regarding the proceeding should be addressed to him at U.S. Department of Transportation, Office of Hearings, M-50, Room 9228, Nassif Building, 400 Seventh Street, SW., Washington, DC 20590. Telephone: (202) 366-2142.

Dated at Washington, DC, July 9, 1987.

William A. Kane, Jr.,

Chief Administrative Law Judge.

[FR Doc. 87-16179 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-62-M

[Order 87-7-19]

Order on Reconsideration of Order 87-4-65 Instituting the U.S.-Venezuela Route Proceeding

AGENCY: Department of Transportation.

ACTION: Order on Reconsideration of Order 87-4-65 instituting the U.S.-Venezuela Route Proceeding—Docket 44843.

SUMMARY: The Department has decided to grant the petitions of American Airlines and Pan American World Airways for reconsideration of Order 87-4-65 instituting the U.S.-Venezuela Route Proceeding. Upon reconsideration, the Department has decided (a) to permit separate awards of New York-Caracas and Miami-Caracas route authority as an alternative to a single award of New York/Miami-Caracas authority (subject to awarding new Venezuela authority to no more than two additional U.S. carriers), and (b) to clarify that the route authority at issue includes service between a point or points in Puerto Rico and Caracas. The Department has also decided to remand or deny the remaining requests raised in the petitions for reconsideration, other related documents, and the prehearing conference, and to affirm the instituting order with respect to those issues.

Dated: July 9, 1987.

Matthew V. Scocozza,

Assistant Secretary for Policy and International Affairs.

[FR Doc. 87-16180 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-62-M

National Highway Traffic Safety Administration

[Docket No. EX87-1: Notice 2]

Aston Martin Lagonda Limited; Grant of Petition for Temporary Exemption From Federal Motor Vehicle Safety Standard No. 208

This notice grants the petition by Aston Martin Lagonda, Ltd., of Newport Pagnell, England, for a temporary exemption from the passive restraint requirements of Motor Vehicle Safety Standard No. 208, *Occupant Restraint Systems*. The basis of the petition was that compliance would cause substantial economic hardship.

Notice of receipt of the petition was published on February 13, 1987, and an opportunity afforded for comment (52 FR 4697).

Petitioner's total production in the 12-month period before filing its petition was 164 motor vehicles, of which 60 were sold in the United States between September 1, 1985, and September 1, 1986. It requested an exemption of three years from the passive restraint requirements of Motor Vehicle Safety Standard No. 208 which became effective September 1, 1986. The Company has been endeavoring since November 1984 to develop a system meeting Standard No. 208 and responsive to the tastes of its customers. Its prototype belt and knee bolster system met the standard's requirements but in the petitioner's opinion could have caused injuries to passengers absent further development. Tests to confirm the efficacy of a redeveloped system (six high "g" sled tests and at least one 30 mph frontal barrier impact) are estimated by the petitioner to cost slightly more than $376,000. The petitioner's net income for fiscal 1986 was approximately only $600,000 (assuming a value of the pound sterling at $1.5175), thus the vehicles could not be immediately conformed without creating substantial economic hardship.

The petitioner is currently negotiating with Breed Corporation for an air bag system but has concluded that under the most favorable circumstances a conforming vehicle will not be available for sale until January 1989. Aston Martin Lagonda argued that an exemption would be in the public interest and consistent with the objectives of the National Traffic and Motor Vehicle Safety Act because it believes the purchasers of its luxury performance cars are more likely than other motorists to use their restraints, and that these restraints meet current injury criteria and have no in-use problems. A denial would mean closure of its United States importer, distributors, and dealers, and "the loss of the USA market could not be replenished by sales in our world markets and our current other world sales could not show a sufficient return of funds to sustain our current workforce * * *."

No comments were received on the petition.

The agency has decided to grant Aston-Martin Lagonda's petition. To require immediate compliance would require an expenditure of a substantial portion of the net income realized from its last fiscal year, as well as delay temporarily further sales of its cars in the American market which in itself would lower the petitioner's income. These sales represent in excess of a third of its total sales. NHTSA has found that immediate compliance would cause substantial economic hardship. Given the facts that a denial would affect the company's U.S. importer, distributors, and dealers, and that only 60 of petitioner's vehicles are sold annually in the United States, it is further found that an exemption is in the public interest and consistent with the objectives of the National Traffic and Motor Vehicle Safety Act. Accordingly, Aston Martin Lagonda Ltd. is hereby granted NHTSA Temporary Exemption No. 87-1 expiring September 1, 1989.

(Sec. 3, Pub. L. 92-548, 86 Stat. 1159 (15 U.S.C. 1410); delegations of authority at 49 CFR 1.50)

Issued on: July 13, 1987.

Diane K. Steed,

Administrator.

[FR Doc. 87-16181 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-59-M

Sunshine Act Meetings

Federal Register
Vol. 52, No. 136
Thursday, July 16, 1987

This section of the FEDERAL REGISTER contains notices of meetings published under the "Government in the Sunshine Act" (Pub. L. 94-409) 5 U.S.C. 552b(e)(3).

FEDERAL ELECTION COMMISSION

"FEDERAL REGISTER" NO.: 87-15654.

PREVIOUSLY ANNOUNCED DATE AND TIME: Thursday, July 16, 1987, 10:00 a.m.

THE FOLLOWING ITEM HAS BEEN ADDED TO THE AGENDA:

Draft Advisory Opinion 1987-15—James F. Schoener on behalf of Kemp for President Committee.

* * * * *

DATE AND TIME: Tuesday, July 21, 1987, 10:00 a.m.

PLACE: 999 E Street, NW., Washington, DC.

STATUS: This meeting will be closed to the public.

ITEMS TO BE DISCUSSED:

Compliance matters pursuant to 2 U.S.C. 437g.
Audits conducted pursuant to 2 U.S.C. 437g, 438(b), and Title 26, U.S.C.
Matters concerning participation in civil actions or proceedings or arbitration.
Internal personnel rules and procedures or matters affecting a particular employee.

* * * * *

DATE AND TIME: Thursday, July 23, 1987, 10:00 a.m.

PLACE: 999 E Street, NW., Washington, DC (Ninth Floor).

STATUS: This meeting will be open to the public.

MATTERS TO BE CONSIDERED:

Setting of Dates for Future Meetings.
Correction and Approval of Minutes.
Eligibility Report for Candidates to Receive Presidential Primary Matching Funds.
Proposed Revisions to the Delegate Selection Regulations (11 CFR 110.14).
Draft Advisory Opinion 1987-21—Richard F. Smith on behalf of MAXUS Energy Corporation ("MAXUS") and Diamond Shamrock R & M, Inc.
Routine Administrative Matters.

* * * * *

DATE AND TIME: Wednesday, July 29, 1987, 10:00 am.

PLACE: 999 E Street, NW., Washington, DC (Ninth Floor).

STATUS: Oral presentation—Reagan-Bush '84 Committee

* * * * *

PERSON TO CONTACT FOR INFORMATION: Mr. Fred Eiland, Information Officer, Telephone: 202-376-3155.

Marjorie W. Emmons,

Secretary of the Commission.

[FR Doc. 87-16275 Filed 7-14-87; 3:00 pm]

BILLING CODE 6715-01-M

FEDERAL TRADE COMMISSION

TIME AND DATE: 2:00 p.m., Thursday, July 23, 1987.

PLACE: Room 532, (open); Room 540 (closed) Federal Trade Commission Building, 6th Street and Pennsylvania Avenue, NW., Washington, DC 20580.

STATUS: Parts of this meeting will be open to the public. The rest of the meeting will be closed to the public.

MATTERS TO BE CONSIDERED: Portions Open to Public:

(1) Oral Argument in Motor Transport Association of Connecticut, Inc., Docket No. 9186.

Portions Closed to the Public:

(2) Executive Session to follow Oral Argument in Motor Transport Association of Connecticut, Inc., Docket No. 9186.

CONTACT PERSON FOR MORE INFORMATION: Susan B. Ticknor, Office of Public Affairs: (202) 326-2179; Recorded Message: (202) 326-2711.

Emily H. Rock,

Secretary.

[FR Doc. 87-16256 Filed 7-14-87; 12:39 pm]

BILLING CODE 6750-01-M

NATIONAL COUNCIL ON THE HANDICAPPED

Quarterly Meeting

SUMMARY: This notice sets forth the schedule and proposed agenda of a forthcoming meeting of the National Council on the Handicapped. This notice also describes the functions of the Council. Notice of this meeting is required under section 522 (b)(10) of the "Government in Sunshine Act" (Pub. L. 94-409).

DATES:

August 3, 1987, 9:00 a.m. to 5:00 p.m.
August 4, 1987, 9:00 a.m. to 5:00 p.m.
August 5, 1987, 9:00 a.m. to 3:00 p.m.

LOCATION: Westin Hotel, Denver, Colorado.

FOR FURTHER INFORMATION CONTACT: Andrea Farbman, National Council on the Handicapped, 800 Independence Avenue, SW., Suite 814, Washington, DC 20591, (202) 267-3846, TDD: (202) 267-3232.

The National Council on the Handicapped is an independent Federal agency comprised of 15 members appointed by the President of the United States and confirmed by the Senate. Established by the 95th Congress in Title IV of the Rehabilitation Act of 1973 (as amended by Pub. L. 95-602 in 1978), the Council was initially an advisory board within the Department of Education. In 1984, however, the Council was transformed into an independent agency by the Rehabilitation Act Amendments of 1984 (Pub. L. 98-221).

The Council is charged with reviewing all laws, programs, and policies of the Federal Government affecting disabled individuals and making such recommendations as it deems necessary to the President, the Congress, the Secretary of the Department of Education, the Commissioner of the Rehabilitation Services Administration, and the Director of the National Institute on Disability and Rehabilitation Research (NIDRR).

The meeting of the Council shall be open to the Public. The proposed agenda includes:

Reports from Chairperson and Executive Director
Native Americans with Disabilities Forum
Briefing By: Americans with Disabilities for Accessible Public Transportation (ADAPT)
Briefings By: Holistic Approaches to Independent Living (HAIL)
Briefings By: Colorado Coalition of Persons with Disabilities
Reports from the Research, Adult Services, Children's Services, and Public Affairs Committees
NCH's discussion of Unfinished and new business

Records shall be kept of all Council proceedings and shall be available after the meeting for public inspection at the National Council on the Handicapped.

Signed at Washington, DC, on July 23, 1987.

Lex Frieden,

Executive Director.

[FR Doc. 87-16184 Filed 7-13-87; 4:47pm]

BILLING CODE 6820-BS-M

OVERSEAS PRIVATE INVESTMENT CORPORATION

Meeting of the Board of Directors

TIME AND DATE: 2:30 p.m. (closed portion), 4:00 p.m. (open portion), Tuesday, July 28, 1987.

PLACE: Offices of the Corporation, fourth floor Board Room, 1615 M Street, NW., Washington, DC.

STATUS: The first part of the meeting from 2:30 p.m. to 4:00 p.m. will be closed to the public. The open portion of the meeting will commence at 4:00 p.m. (approximately).

MATTERS TO BE CONSIDERED: (Closed to the public 2:30 p.m. to 4:00 p.m.):

1. Finance Project in East Asian Country
2. Finance Project in West Asian Country
3. Internationally Recognized Worker Rights in China
4. OPIC Budget for FY 1989 and Amendments for FY 1988
5. Performance Requirements
6. Claims Reports
7. Information Report (Finance)
8. Insurance and Finance Reports
9. Status Report on U.S. Effects Study
10. Status Report on Finance Project in Central American Country

FURTHER MATTERS TO BE CONSIDERED: (Open to the public 4:00 p.m.)

1. Approval of the Minutes of the Previous Board Meeting
2. Approval of Proposed Regular Meetings of the Board
3. Personnel Action
4. Treasurer's Report
5. Information Reports

CONTACT PERSON FOR INFORMATION: Information with regard to the meeting may be obtained from the Secretary of the Corporation, on (202) 457-7079.

Margaret A. Kole,

OPIC Corporate Secretary.

July 14, 1987.

[FR Doc. 87-16254 Filed 7-14-87; 12:30 pm.]

BILLING CODE 3210-01-M

Corrections

Federal Register

Vol. 52, No. 136

Thursday, July 16, 1987

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents and volumes of the Code of Federal Regulations. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Marine Mammals; Application for Permit: John G. Shedd Aquarium (P396)

Correction

In notice document 87-13684 beginning on page 22834 in the issue of Tuesday, June 16, 1987, make the following correction:

On page 22835, in the first column, in paragraph number 3., the second line should read "Mammals: Beluga whales 3".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 178

[Docket No. 86F-0159]

Indirect Food Additives: Adjuvants, Production Aids, and Sanitizers

Correction

In rule document 87-13279, beginning on page 22300, in the issue of Thursday, June 11, 1987, make the following corrections:

1. On page 22300, in the "**SUMMARY**", in the fifth line, "tetramethylbutyl)amino" should read "tetramethylbutyl) amino".

§ 178.2010 [Corrected]

2. On page 22301, in the second column, in § 178.2010(b), in the table, under the heading "Substances", in the fifth line, "hexamethylene-" should read "hexamethylene".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Parts 103 and 165

[Docket No. 82N-0319]

Nonalcoholic Beverages; Proposal To Repeal Standard of Identity for Soda Water

Correction

In proposed rule document 87-11450, beginning on page 18922, in the issue of Wednesday, May 20, 1987, make the following correction:

On page 18922, in the third column, in the second complete paragraph, in the first line, "appeal" should read "repeal".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 181

[Docket No. 82N-0318]

Caffeine in Nonalcoholic Carbonated Beverages

Correction

In proposed rule document 87-11451, beginning on page 18923, in the issue of Wednesday, May 20, 1987, make the following corrections:

1. On page 18924, in the first column, in paragraph (1), in the sixth line, after "that" insert "then".

2. On page 18925, in the first column, in the first full paragraph, in the first line, "1560's" should read "1950's".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. 87N-0215]

Drug Export; Leucovorin Calcium for Injection 350 mg/vial

Correction

In notice document 87-14387 appearing on page 23892 in the issue of Thursday, June 25, 1987, make the following correction:

In the third column, just before the first complete paragraph, insert--

"Interested persons may submit relevant information on the application to the Dockets Management Branch (address above) in two copies (except that individuals may submit single copies) and identified with the docket number found in brackets in the heading of this document. These submissions may be seen in the Dockets Management Branch between 9 a.m. and 4 p.m., Monday through Friday.".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. 87F-0038]

Pilot Chemical Co.; Withdrawal of Food Additive Petition

Correction

In notice document 87-14160 appearing on page 23606 in the issue of Tuesday, June 23, 1987, make the following correction:

In the second column, in the last line of the **SUPPLEMENTARY INFORMATION**, the first citation should read "§ 171.7(b)".

BILLING CODE 1505-01-D

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. 87F-0179]

Procter & Gamble Co.; Filing of Food Additive Petition

Correction

In notice document 87-14159 appearing on page 23606 in the issue of Tuesday, June 23, 1987, make the following correction:

In the second column, in the **SUMMARY**, in the seventh line, "esterfied" should read "esterified".

BILLING CODE 1505-01-D

federal register

Thursday
July 16, 1987

Part II

Department of Labor

Occupational Safety and Health Administration

29 CFR Parts 1910 and 1926

Health and Safety Standards; Methylenedianiline (MDA) Mediated Rulemaking Advisory Committee Recommendations

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Parts 1910 and 1926

Methylenedianiline (MDA) Mediated Rulemaking Advisory Committee Recommendations

AGENCY: Occupational Safety and Health Administration (OSHA), Labor.

ACTION: Publication of Advisory Committee Recommendations.

SUMMARY: This document represents the recommendations made through the consensus agreement of the Mediated Rulemaking Advisory Committee for Methylenedianiline (MDA). The Committee offers these recommendations to serve as the basis for a proposed standard for occupational exposure to MDA.

FOR FURTHER INFORMATION CONTACT: Mr. James F. Foster, OSHA, U.S. Department of Labor, Office of Public Affairs, Room N-3641, 200 Constitution Avenue, NW., Washington, DC. 20210; Telephone: (202) 523-8151.

SUPPLEMENTARY INFORMATION: On October 22, 1985, OSHA announced its intent to make use of mediated rulemaking in developing a proposed standard for MDA (50 FR 42790-42793). This notice also set forth the basic concepts of mediated rulemaking and outlined the participant selection criteria which OSHA expected to use in establishing an MDA mediated Rulemaking Committee.

OSHA established the committee in accordance with the Federal Advisory Committee Act (FACA) and section 7(b) of the Occupational Safety and Health Act (OSH Act) to negotiate issues associated with the development of a Notice of Proposed Rulemaking (NPRM) on MDA.

Appointees to the committee include representatives from labor, industry, health and safety groups, and government agencies. The appointees also represent groups interested in, or affected by, the outcome of the proposed rule.

The Committee was formally presented with the scope of its responsibilities and duties on July 22, 1986 in Washington, DC. The Committee would function as an integral part of the Department's rulemaking on MDA. It would attempt, via face-to-face mediation, to reach consensus on language and concepts which would be used as the basis of OSHA's NPRM. The Committee was given the responsibility of identifying the key issues, gauging their importance, analyzing the information necessary to resolve the issues, arriving at a consensus, and submitting to the Assistant Secretary of Labor—OSHA the regulatory text and supporting rationale for an occupational health standard governing worker exposure to MDA.

In carrying out these responsibilities the Committee met seven times for a total of 24 days.

OSHA is publishing the following document which represents the work product of the Committee—a recommended proposed standard for occupational exposure to MDA, including a complete regulatory text with supporting rationale. OSHA plans to use this document as the basis for its NPRM unless it is inconsistent with OSHA's statutory requirements or is otherwise unjustified. OSHA plans to publish this NPRM within 90 days.

Signed in Washington, DC, this 26th day of June, 1987.

John A. Pendergrass,

Assistant Secretary of Labor.

The text of the Committee's recommendation reads as follows:

A. The Format of This Document

I. Introduction
II. Authority Regulating the Committee's Activities
III. Health Effects
IV. Risk Assessment
V. Significance of Risk
VI. Economic and Technological Feasibility
VII. Summary and Explanation for a Standard for General Industry
VIII. Summary and Explanation for a Standard for the Construction Industry
IX. Environmental Impact Statement
X. Authority and Signature
XI. Recommended Standards for General Industry
XII. Recommended Standards for the Construction Industry

I. Introduction

Background Information Leading to the Development of the Committee

OSHA announced its intention to study and possibly regulate workplace exposures to MDA in an Advance Notice of Proposed Rulemaking (ANPR) [48 FR 42836; September 20, 1983], published jointly by the Environmental Protection Agency (EPA) and OSHA. The comments and information received in response to the EPA ANPR were submitted to EPA Docket No. OPTS-64000A. All relevant materials from the EPA docket have been included in the OSHA Docket (H-040) for MDA and have been utilized by the Mediated Rulemaking Advisory Committee in making its recommendations.

OSHA and EPA examined the docket information and made simultaneous regulatory determinations. EPA announced in its July 5, 1985, **Federal Register** notice (50 FR 27674) that the MDA rulemaking would be referred to OSHA in accordance with section 9 of the Toxic Substances Control Act (TSCA). OSHA responded to the EPA referral by making an assessment of risk and outlining the regulatory actions the Agency intended to follow. As a result of these preliminary assessments, the Agency selected MDA for rulemaking. Furthermore, OSHA initiated MDA regulatory action by announcing in the **Federal Register**, October 22, 1985, that mediated rulemaking would be used to assist in the development of a proposed rule.

OSHA provided guidance on the role the Mediated Rulemaking Committee would have in developing a proposed rule for occupational exposure to MDA:

> While the Committee's work product will likely serve as the basis for a proposed rule, it will not negate the need for adherence to traditional rulemaking procedures. This negotiated rulemaking procedure is supplemental to the normal section 6(b) rulemaking procedures specified in the OSH Act and is intended to aid OSHA in developing a proposed standard for occupational exposure to MDA.

The October 22, 1985 notice also solicited participants for the mediation process. As a result of the request for participants, three unions, the United Auto Workers (UAW), the United Steel Workers of America (USWA) and the Oil, Chemical, and Atomic Workers (OCAW) offered names of potential representatives for the Mediated Rulemaking Advisory Committee. OSHA selected representatives from the United Auto Workers and Steel Workers to participate in these mediation activities. OCAW withdrew its request for representation. However, the International Association of Machinists and Aerospace Workers (IAM) indicated that it had a worker representational interest and designated a representative for consideration. OSHA's review of the worker populations represented by IAM resulted in a finding that this organization did, in fact, represent a significant portion of those workers occupationally exposed to MDA and hence was an appropriate labor representative. Later, as a result of scheduling conflicts, the UAW representative resigned and was replaced by a labor representative from the United Brotherhood of Carpenters and Joiners of America. Again, a review of the worker populations represented by this union resulted in a finding that this organization did represent a significant portion of those workers occupationally exposed to MDA and hence was an appropriate labor representative.

In addition to the unions that nominated participants, three trade associations representing employer groups also expressed an interest in participating in this rulemaking effort: The National Electrical Manufacturers Association (NEMA), the Suppliers of Advanced Composite Materials Association (SACMA) and the Chemical Manufacturers Association (CMA). Representatives from these groups reflect employer interests in primary, secondary and, to some extent, downstream use of MDA. The other recommendations for representation came from the Department of Energy, Brookhaven National Laboratory, Sandia National Laboratories, the National Institute for Occupational Safety and Health, the Environmental Protection Agency, and the Occupational Safety and Health Administration for the state of California.

After careful consideration of the qualifications and representational interests of the potential participants, as well as the pertinent legal requirements, OSHA selected the participants for the Mediated Rulemaking Advisory Committee and published this information in the **Federal Register** on July 3, 1986 (51 FR 24452). OSHA also announced in this **Federal Register** notice the first date the group would meet and the proposed agenda.

The agenda for the first meeting established the time, place, dates, and topics to be discussed at subsequent meetings and provided proposed ground rules to be used in conducting these mediated rulemaking proceedings (See Ex. 7-1). The Mediated Rulemaking Advisory Committee adopted the agenda for subsequent meetings and modified the ground rules to be used in conducting the balance of the meetings. At subsequent meetings the Mediated Rulemaking Committee was provided with recommendations and draft language to be considered as the basis of the Committee's proposal (See Ex 7-2 through 7-7). This document contains the Committee's recommendations for a proposed rule regulating occupational exposure to MDA. The Committee recognizes that in addition to publishing its recommendations, OSHA has agreed to publish a notice of proposed rulemaking within 90 days following the publication of the Committee's recommendations in the **Federal Register**. OSHA has also agreed to publish a final rule regulating occupational exposure to MDA within 180 days after the publication of its Notice of Proposed Rulemaking or after the certification of any hearing record (if such a hearing is held).

II. Authority Regulating the Committee's Activities

A. Legal Authority

Under the Federal Advisory Committee Act (FACA) (Pub. 2.92-463 as amended), committees can be established by U.S. government action or affirmatively supported and "utilized" by the Federal Government as preferred sources of advice on specific issues or policies. A Mediated Rulemaking Advisory Committee is a "preferred source" under FACA. This Committee was established in accordance with the requirements of FACA, section 7(b) of the OSH Act, and 29 CFR Part 1912.

B. Self Imposed Authority (Ground Rules)

At the initial meetings, July 22-23, 1986, the Committee established the ground rules to be followed throughout the mediation process. These ground rules contributed to the success of this endeavor.

The first set of ground rules contained the selection criteria used to determine whether a proposed rule for occupational exposure to MDA could be successfully mediated. The Committee established four criteria:

1. The substance selected must be at the pre-proposal stage of development.
2. The substance must have a relatively small number of identifiable parties representing the interest of all affected parties who will negotiate in good faith.
3. It must present specific issues for which sufficient information/technologies, etc., are at hand for resolution.
4. It must have a determination that a significant risk exists and that the Agency has a need to issue a proposed regulation.

OSHA had previously determined that MDA was a suitable candidate for mediated rulemaking and relied on the same selection criteria as that adopted by the Committee.

The second set of ground rules established the requirements for the size of the committee and certain member obligations. The Committee agreed that its size should be limited to fifteen members including a mediator and that the process would begin once the Committee roster was published in the **Federal Register**. Additionally, the Committee agreed that individual members could make use of experts at their own expense. However, the testimony of these experts would be limited to providing additional and/or clarifying information. Furthermore, the Committee restricted oral presentations by these experts by first requiring a majority vote of the Committee. The Committee believed that the use of experts in this manner is a crucial element of order, in that uncontrolled or excessive participation by outside sources would impede the progress of the Committee. Further, the Committee agreed that the appropriate forum for testimonial presentations is through the public hearing process and not through the Advisory Committee. The Committee agreed that meetings would be open to the public, however, the Committee reserved the right of interest groups to caucus in private.

The third set of ground rules required the government to provide suitable negotiating and caucus rooms. In addition, the government was required to provide secretarial and support staff. The Committee realized that a great deal of effort would be required to develop recommendations for a proposed rule for occupational exposure to MDA and recognized the need for a support staff. Further, the Committee recognized that "off the record" discussions among the represented interests would be needed if decisions concerning issues "at the bargaining table" were to be made.

The fourth set of ground rules involved the exchange of proposals. OSHA initially proposed more stringent time requirements for the submission of proposals or counterproposals. A majority of the Committee felt that stringent time requirements would interfere with the exchange of ideas and therefore adopted the following rules:

- OSHA must provide draft language 20 days prior to each scheduled session.
- Only scheduled items may be discussed (unless the majority of the Committee agrees to discuss unscheduled items).
- Policy matters mandated by the Occupational Safety and Health Act or previously adopted by the Agency are not subject to negotiation.

The Committee recognized that agreeing to this last provision, i.e., not challenging OSHA policy, created the potential to undermine the entire mediated rulemaking process. The Committee accepted this ground rule only because the Committee recognized that the Agency was bound, either by law or by policy, to implement certain provisions or adopt various concepts. For example, even if the entire Committee agreed to exclude medical surveillance in its recommendations, the OSHA representative would still be bound to make the recommendation to include medical surveillance for it is OSHA's belief that this is mandated through the OSH Act and past policy considerations. Thus, the Committee agreed that it could be more productive if it worked within the same guidelines as those that bind the Agency. The Committee, however, agreed that in those instances that law or policy prevents compromise, to make dual recommendations; the first being to amend the law or policy and the second an alternative recommendation. The Committee considered various proposals in developing suitable alternative provisions. In fact, all proposals were considered as long as the primary objective of this project, i.e., providing the worker with a safe and healthful workplace, was not compromised. The recommendations developed by this Committee neither contradict OSHA policy nor compromise worker benefits expected from an ocoupational standard regulating worker exposure to MDA.

An artful blend of policy, principles, and compromise was demonstrated through the Committee's recommendations for assessing the risk of occupational exposure to MDA. Clearly, the Agency had previous policies and practices for determining risk and making significant risk determinations; the Committee acknowledged these policies and made findings, such as significance of risk, in accordance with these mandated practices. However, the recommendations for making risk assessments were also founded on sound scientific principles, many of which also serve as the basis for OSHA policy.

In the fifth set of ground rules, the Committee established the criteria for governing the conduct of the mediation sessions. The Committee agreed that the sessions would be held on three consecutive days per month over a six month period. Members also agreed that the time could be extended if the Committee felt that additional time was needed to achieve agreement on issues being mediated. In establishing the caucus procedure the Committee limited that time to 30 minutes per issue. Some Committee members objected to the use ot the caucus stating that in some instances caucuses could be too frequent or too lengthy. The majority of the Committee members nonetheless felt that the ability to caucus aided in the decision making process.

The sixth set of the ground rules defined concurrence as 75% of all votes cast, either affirmative or negative, but not including abstentions. This set also established procedures for members holding proxy votes. The giving of a proxy by a Committee member to another Committee member was restricted to those of the same representational interest. Many Committee members argued that a member should be allowed to give proxy votes to non-members. Furthermore, they argued that work loads were such that their attendance at all of the meetings may not be possible and thus would prefer participating through a fellow employee. The Committee, however, agreed to restrict the use of proxies for several reasons: First, the transfer of proxy votes is restricted to members by OSHA Advisory Committee regulation (29 CFR 1912.29). Second, and more importantly, consistent changing of Committee participants would not be conducive to the mediation process. It is essential that a participant have all the facts before him and be prepared to develop solutions to issues by being present and participating in the entire mediated rulemaking process. Anything short of total participation hampers the individual's ability to meet the challenge set forth by Assistant Secretary Pendergrass. In fact, the potential to be accused of "not bargaining in good faith" is heightened by "switching representatives".

This section also contains the quorum requirements. The Committee agreed that two-thirds of the members would constitute a quorum, as long as at least two members who represented employees and two members who represented employers were present. In addition, a member holding a proxy counted as only one vote for quorum purposes. Initially, some members argued that a quorum should be formed when only one member representing employees and one member representing employers were present. However, both employer and employee representatives opposed this suggestion, stating that the potential for the outcome of a session to fall entirely on an individual member of an interest group would not serve the interest of the entire Committee. Furthermore, this would be excessively burdensome and clearly not supportive of the basic Committee concurrence concept which purports to solicit information from 14 individuals which in turn will be used as the basis for the Committee recommendation. Committee Counsel, provided by the Department of Labor noted that the success of this effort revolved around the degree of participation offered by each Committee member. The entire Committee agreed that participation was important to the success of this project and that the responsibility for accomplishing this task should be shared equally by all the Committee members, thus the more stringent quorum requirements were developed.

The Committee also decided that concurrence would be determined independently on each section of the standard rather than on the entire standard. Several of the Committee members disagreed with adopting this provision. One member representing employers' interests, and one representing the employees' interest, wanted to vote on the final recommendation (consisting of the various recommendations) made to the Secretary. The majority of the Committee members, however, felt that the task was not an "all or nothing" proposition and that whatever recommendations that the Committee made to OSHA, on any of the standard provisions, would be useful. Thus, the potential to withhold useful information obtained on an issue by issue basis because the entire package could not be agreed upon did not appear to be reasonable nor did it fulfill the "charge" rendered by Assistant Secretary Pendergrass. Thus the majority of Committee members agreed to accept concurrence on an issue by issue basis. The Committee did, however, agree that the dissenting vote of a Committee member would be made part of the recommendation made to the Assistant Secretary.

Members were given several voting options: to affirm the vote, dissent but provide rationale for disagreeing, abstain from voting, defer voting, render a conditional vote, and revisit an issue with cause. Early in the process, the Committee recognized that an interrelationship exists between many of the standard provisions. Furthermore, the Committee realized that the outcome or resolution of one issue often determines or limits the ability to compromise on a subsequent provision. Revisiting the definition of a regulated area, afrer determining the regulatory parameters of a regulated area is one example. Revisiting an issue or conditioning a vote allowed a member the necessary latitude to consider the interrelationship of provisions as the recommended standard took shape. In addition, as a result of pending regulations or policy considerations, allowing Committee members to abstain from voting when dealing with sensitive issues tended to facilitate the mediation process. It does not limit the exchange of ideas among unaffected Committee members or place the affected Committee member in an uncomfortable position. The Committee, however, agreed that an abstention from voting should not be used to determine a majority for voting purposes and that only positive and negative votes could form the basis of a majority vote.

The Committee also agreed that concurrence equals a majority vote when 75% of all votes cast, both positive and negative, are the same. This ground rule was by far the most significant compromise made by the Committee. Past mediated rulemaking efforts operated on a 100% majority vote before moving on to the next issue. It is nearly impossible to get everyone to agree on everything and thus the potential for impasse is great. In addition the 100% agreement provision often leads to "issue bargaining" which may lead to unfavorable "trade-offs". The Committee members unanimously agreed that the "unfavorable trade-off" or "lives bargaining" perception should be avoided at all costs. This ground rule allowed the Committee to proceed to the next issues without achieving 100% agreement, thereby forestalling both impasse and the need to bargain beyond the issue limit. However, it should be noted that while the potential to polarize votes and vote down particular interests still existed, especially because of the less than 100% rule, the Committee avoided this situation. The Committee made every effort to resolve a conflict and achieve a compromise even when it was apparent that a polarization of votes had occurred and that voting an interest down was plausible. In fact, the Committee has voted unanimously on approximately 90% of the issues.

The seventh set of ground rules established the method to be used in documenting the proceedings of each mediation session. The Committee felt that the maintainence of a verbatim transcript would impede the free exchange of ideas. The Committee agreed that only minutes of each session would be kept.

The eighth set of ground rules established the authority of the mediator as Committee chairman. The Committee restricted the authority of the mediator to interpreting the ground rules in the event of a dispute and making suggestions for the resolution of any issues. In restricting the authority of the mediator, the Committee members felt that, as a consensus building group, they should be responsible for their own schedules, set their own itineraries, and develop their own issues. Further, the Committee agreed that OSHA should retain primary responsibility for developing the issues and drafting the text to be considered by the entire Committee.

The final set of ground rules involved OSHA's responsibility to the Committee. The Committee agreed that the final product of the mediation process would serve as the basis for the Committee's recommendations for a proposed rule regulating occupational exposure to MDA. OSHA agreed to publish within 90 days of the close of the mediation process its own notice of proposed rulemaking. OSHA however, agreed to use the Mediated Rulemaking Advisory Committee's report as the basis for its Notice of Proposed Rulemaking (NPRM), except for any provision it found inconsistent with OSHA's statutory requirements or otherwise unjustified. The Agency accepted the burden of justifying any deviation in its proposed rule from the Committee's recommended standard. OSHA also agreed to publish a final rule within 180 days after the issuance of its proposal or after the certification of any hearing record.

In addition, the Committee realized that these mediated rulemaking efforts would not replace the need for OSHA to adhere to traditional rulemaking procedures. Nor would participation in these mediated efforts formally bind, in a legal sense, the participant, his company, or his interest.

In consideration of the legal authority and through authority granted by the Committee Charter and in accordance with these ground rules, the Committee developed the standard provisions and rationale presented in the following sections.

III. Health Effects

A. Introduction

The Committee reviewed the literature concerning the acute and chronic effects of exposure to MDA in both animals and humans. The Committee examined all available information and concluded that MDA should be treated as a hepatotoxic agent and as a suspect human carcinogen. The Committee also concluded that an occupational standard regulating worker exposure to MDA should be developed.

B. Acute Effects of Exposure to MDA

(i) Hepatotoxicity

a. *Human Studies.* Almost all forms of acute environmental hepatic injury in humans involve the hepatic parenchyma producing hepatocellular jaundice. One interesting exception is methylenedianiline. This agent produces intrahepatic cholestasis. The clinical picture consists of cholestatic jaundice, preceded or accompanied by abdominal pain, fever, and chills. Onset in about 60% of all observed cases is abrupt, with severe abdominal pain. In about 30% of observed cases, the illness begins and evolves more slowly and less dramatically, with only slight abdominal pain. In about 10% of the cases, only jaundice is evident. The cholestatic nature of the jaundice is manifest through the prominence of itching, the histologic predominance of bile stasis, and portal inflammatory infiltration. In most cases, this is accompanied by only slight parenchymal injury and moderately elevated transaminase values. The evidence of the occurrence of this chemically induced disease is presented below. The predominance of data reflect the induction of disease as a result of dermal absorption of MDA.

Kopelman et al. (Ex. 1–69, 1966) reported acute hepatitis as a result of exposure to MDA in a non-occupational environment. This incident occurred in 1965 in Epping, England. Eighty-four individuals who consumed wholemeal bread contaminated with MDA developed hepatitis. Investigators discovered that a container of MDA solution spilled and mixed with flour also being carried in the van. The amine was later isolated from the bread found in the patients' home and also from the contaminated flour. It was not possible to determine whether the individuals ate the bread on one or several occasions or how much bread they consumed per occasion. The actual level of MDA consumed by any individual varied according to the amount of bread consumed and the degree of contamination of the flour used to bake individual loaves of bread. The bread that was analyzed contained 0.26% MDA and weighed about 160 g/loaf. The investigators estimated that many victims of the jaundice outbreak had received doses on the order of 3 mg/kg body weight. In the majority of cases symptoms developed 2 days to 2 weeks after exposure.

Among the 84 individuals affected, 50 had acute onset of symptoms with severe, intermittent, upper abdominal and lower chest pain, lasting 24–26 hours. After the pain subsided, dark urine and pale feces were noted. In addition, 57 of the 84 patients had elevated serum bilirubin. During the next four to five days, the patients all improved but many later developed fever, with flu-like aches or pains and increased jaundice. Among the latter group of patients, the liver was enlarged and tender. After a few days general improvement was noted in this group, although jaundice sometimes persisted for several weeks. Twenty-nine other patients had only vague symptoms initially, but about one week later developed fever, generalized aches, and increased jaundice. The jaundice tended to persist longer in these 29 patients compared to the earlier group. The remaining five patients were elderly individuals who developed a third syndrome of severe jaundice with minimal preceding symptoms. Their livers were greatly enlarged but rarely tender on palpation.

Kopelman (Ex. 1–69, 1966) reported a 2-year follow-up study on 43 of the 84 persons known to have suffered injury in the Epping Jaundice Incident. While no evidence of progressive liver disease was seen, some patients reported fat, fruit or alcohol intolerance, weight loss or other troublesome symptoms.

McGill and Motto (Ex. 1–74, 1974) described 13 cases of acute hepatitis associated with the industrial use of MDA. Between 1966 and 1972, 12 male employees (average age 22 years) were exposed to MDA. The 12 factory employees affected were mill helpers. Exposure occurred when these workers blended MDA into "compound 512" using their cotton gloved hands. In general, the affected workers became ill within 2 weeks of beginning work. Although exposure was primarily dermal, inhalation exposure could not be ruled out since the temperature of the compound was 83 degrees Centigrade (181 degrees Fahrenheit).

The thirteenth worker was from a second factory where MDA flakes were pulverized. The time from initial exposure to onset of disease for this worker was 3 days. Estimates of the amounts absorbed through the skin were not available although the primary mode of worker exposure was assumed to occur through dermal absorption. All who contracted hepatitis were exposed for periods ranging from 2 days to 2 weeks. The investigators concluded that all patients recovered completely and returned to work within 10 weeks of the onset of symptoms.

Evidence for MDA-induced hepatitis was reported from application of epoxy resins containing MDA. In this application six of approximately 300 men who applied epoxy resins containing MDA to concrete walls developed clinical hepatitis 2 days to 2 weeks after starting work (Ex. 1–83, 1974). In this instance MDA was mixed with liquid epoxide at the work site and applied to the walls with trowels or a spray gun. This application process resulted in exposure by inhalation during spraying, ingestion while eating or smoking, and absorption through the skin. None of the other components of the resin were known hepatotoxins. The authors of this study concluded that MDA was the causative agent of the workers' illness, although workers were exposed to a mixture of chemicals in the resin, some of which could have contributed to the outbreak.

Brooks et al. (Ex. 1–57, 1979) reported myocardial as well as hepatic damage in a 20-year old male following "massive acute exposure" to MDA caused by a malfunctioning air filter system. Six days following the accident the worker was hospitalized with abdominal pains which lasted for 3 days.

b. *Animal Studies.* Malten et al. (Ex. 1–71, 1973) and Kopelman et al. (Ex. 1–68 1966) performed several studies in animals using extracts of the bread involved in the Epping jaundice outbreak. In each of these studies, liver changes and "toxic manifestations" were noted.

McGill and Motto (Ex. 1–73, 1974) indicated that floor sweepings containing MDA produced hepatic as well as renal abnormalities when they were given to rabbits by oral intubation at a dose of 1 g/kg body weight.

Schmidt et al. (Ex. 1–78, 1974) determined the oral LD_{50} for purified MDA in mice, rats, guinea pigs, and rabbits to range from about 200 to 700 mg/kg, depending upon animal species and sex. Pludro et al. (Ex. 1–139, 1969) also determined the oral LD_{50} of MDA to be 830 mg/kg body weight in Wistar rats.

Gohlke and Schmidt (Ex. 1–65, 1974) observed micropathological changes in organs when they gave a single oral dose of 50, 200, or 600 mg/kg MDA to random-bred male albino rats

Allied (Ex. 1–41, 1983) reported an acute oral LD_{50} of 662±81 mg/kg in albino rats. MDA was classified as slightly to moderately toxic.

Tullner (Ex. 1–164, 1960) injected a single dose of MDA subcutaneously into 12 one-month-old CRW mice. Doses of 0.1 to 0.2 ml of 50 mg of MDA in 1 ml of arachis oil were injected into each mouse. The administration of a single dose of either 0.1 or 0.2 ml produced hepatic damage in the mice similar to that reported in humans.

(ii) Other Studies

Harada (Ex. 1–101, 1967) investigated the effect of MDA on adrenocortical secretion in 30 male Wistar rats. These rats were anesthetized and infused with MDA-2HCL at a dose of 100 mg/kg body weight intravenously. Harada concluded that in both hypophysectomized and non-hypophysectomized rats, the observed corticosterone secretion was caused by the direct action of MDA on the adrenal cortex. Tullner (Ex. 1–164, 1960) observed a similar effect in dogs administered MDA-2HCL intravenously following adrenal vein cannulation.

Schmidt et al. (Ex. 1–78, 1974) investigated the effect of MDA on hexabarbital induced lateral position sleeping time in male rats. Random-bred male rats (no strain specified), weighing 220–290g, received a single oral dose of technical grade MDA in peanut oil (200 mg/kg) or purified MDA in peanut oil (50 mg/kg). Hexabarbital sleeping time of the animals treated with technical grade MDA was significantly increased (p less than 0.05), while in animals treated with purified MDA, no difference in sleeping times was observed. Technical grade MDA extended the hexabarbital sleeping time of rats to twice that of the controls. Nothing in the literature is available that suggests that similiar reactions are found in humans; therefore the significance of this study in the occupational setting is not known.

(iii) Dermal Irritation

Two studies indicated that MDA might produce dermal irritation in exposed workers. In the first study, at least eight employees in a polyurethane molding plant developed dermatitis over a six month period on exposed skin areas, usually during the second or third week of work (Emmett Ex. 1–61, 1976). Seven of those affected were molders; the eighth employee worked in the molding area.

In a second study, Malten et al. (Ex. 1–71, 1973) tested 100 leg ulcer patients (79 females and 21 males) for allergy to approximately 76 substances, including MDA. Although patients reacted to MDA on challenge, the study did not show that MDA could induce an allergic response.

Levy (Ex. 1–124, 1978) reported a case of erythematous pruritic dermatitis (rash) on the arms and forearms of a worker handling insulation materials containing MDA. However, the cause of the rash could not be determined. A NIOSH Health Hazard Evaluation (Ex. 1–255) also noted a high incidence of skin disorders in workers exposed to epoxy resins that contained MDA.

(iv) Retinal Effects

Schilling, et al. (Ex. 1–270, 1966) administered single doses of 25–200 mg/kg body weight of MDA by stomach tube to 15 adult cats. One cat became blind one week after administration of doses of 25 and 50 mg/kg body weight, with retinal injuries observed at the rod and cone level. Another cat which received a dose of 200 mg/kg body weight also was blinded, with complete atrophy of the rods and cones of the nuclei of the outer granular layer. In addition, a total of three cats that received various doses of MDA, ranging from 25–100 mg/kg, developed reversible blindness.

An abstract of a study conducted by Leong (Ex. 1–260, 1986) indicates that two strains of guinea pig suffered rod and cone degeneration as a result of exposure to an MDA-containing aerosol. Experimental details sufficient to determine the dose responsible for this effect are not available.

Roy, et al. 1985 (Ex. 1–259, 1985), reported an incident of impaired visual acuity in a worker who accidentally ingested a large dose of MDA and other chemicals.

C. Chronic Effects of Exposure

(i) Hepatotoxicity

Deichmann, et al. (Ex. 1–60, 1978) fed purified and crude MDA to nine female beagle dogs (70 mg of MDA, three days per week, for 86 months). Both grades of MDA produced similar results: occasional weight loss, moderate to severe gross and micropathological changes in the liver, slight to moderate changes in the kidneys and spleen, and occasional gross or micropathological changes in other organs, such as the lungs and uterus. MDA did not affect blood sugar, blood urea nitrogen (BUN), creatinine, uric acid, total protein, or albumin.

Gohlke (Ex. 1–64, 1978) used four groups of 120 male albino rats for: Negative controls, vehicle controls, or MDA treated animals at two dose levels of 8 and 20 mg/kg. MDA was administered by gavage five days per week for 16 weeks. Another 60 rats (sex not specified) of the same strain were placed into two groups of 30 each: Vehicle or MDA treated (3.2 mg/kg) 5 days per week for 16 weeks. Only 437 animals were examined because of cannibalism and autolysis which occurred over a weekend. Evidence of liver toxicity was found among MDA treated animals.

Fukushima et al. (Ex. 1–63, 1979) fed five groups of male Wistar rats (ranging from 8 to 33 animals per group) 1,000 ppm MDA in their diet for 8, 16, 24, 32 or 40 weeks. A control group of eight rats was fed a basal (untreated) diet for 40 weeks. Three to six rats in each group were sacrificed at 8 week intervals after cessation of MDA feeding until termination of the study at 40 weeks, when all remaining animals were sacrificed. Microscopic examination of MDA treated rats revealed bile duct hyperplasia and oval cell proliferation which resembled portal cirrhosis. Inhibition of growth occurred in rats fed MDA. After 24 weeks, the liver surface appeared rough and granular and when cut was firmer in consistency than normal with fibrotic changes and resistence to cutting. These alterations were more pronounced with increased periods of MDA administration.

In the National Toxicology Program (NTP) bioassays, 150 or 300 ppm MDA dihydrochloride was administered to groups of 50 F344/N rats and 50 B6C3F1 mice of each sex, in drinking water for 103 weeks. Controls (50 rats and 50 mice of each sex) received drinking water only, adjusted with 0.1 N HCL to pH 3.7. Survival was comparable among groups except for male mice receiving the high MDA dose; survival was lower than that in controls. Mean body weight was reduced in high dose female rats and in high dose male and female mice. No compound related clinical effects were observed.

Non-neoplastic effects related to MDA included thyroid follicular cysts and thyroid hyperplasia in female rats; thyroid follicular cell hyperplasia was elevated in high dose male and female mice. Dose related increases in nonspecific liver dilation was observed in male rats and fatty metamorphosis and focal cellular changes were observed in male and female rats. Liver degeneration was present in 80% of the low dose and 60% of the high dose male mice but was not found in the controls. Male rats had a dose-related increase in kidney mineralization. Nephropathy was increased in dosed mice of both sexes; renal papillary mineralization was greater in high dose male and female mice than in the controls.

Munn (Ex. 1–132, 1967) treated 24 male rats with MDA dissolved in arachis oil by gavage for 121 days. The animals received a total dose of 3.3 mg/g body weight. All test animals were found to have cirrhosis of the liver.

Zylberszac (Ex. 1–261, 1951) reported cirrhosis of the liver after implantation of MDA crystals of MDA under the skin of 25 male rats of mixed strains weighing 150–220 g. Each animal received seven 0.25 mg implantations in a 5 month period. The time of sacrifice was not specified. All the animals developed cirrhosis of the liver.

(ii) Carcinogenicity

(a) *Animal Studies.* The most significant and more recent experimental data are from the National Toxicology Program (NTP) bioassay (Ex. 1–36, 1983). The study involved the oral administration of 98.6% pure MDA dihydrochloride in drinking water to 50 Fischer 344/N rats and 50 $B6C3F_1$ mice of each sex at each dose level.

Groups of 50 rats and 50 mice of each sex received drinking water containing 150 or 300 ppm 4,4'-methylenedianiline dihydrochloride (dosage expressed as the free base) for 103 weeks. Groups of 50 rats and 50 mice of each sex, given drinking water adjusted with 0.1N HC1 to the pH (3.7) of the 300-ppm formulation, served as controls.

Survival was comparable among groups except for those mice who received the high dose of 4,4'-methylenedianiline dihydrochloride; survival in that group was lower ($P=0.006$) than that in the controls. Mean body weight was reduced in high dose female rats and in high dose male and female mice. Water consumption was reduced in a dose-related manner in both sexes of rats. No compound-related clinical effects were observed.

The incidences of thyroid neoplasms in the high dose groups were elevated compared with those of control groups for both sexes and both species. Thyroid follicular cell carcinoma was increased in male rats (controls, 0/49; low dose, 0/47; high dose, 7/48, 15% $P<0.0012$). Follicular cell adenoma was increased in high dose female rats (0/47; 2/47, 4%; 17/48, 35%: $P<0.001$), in high dose male mice (0/47; 3/49, 6%; 16/49, 33% $P<0.001$), and in high dose female mice (0/50: 1/47, 2%; 13/50, 26%; $P<0.001$) as compared with controls. In female rats, thyroid C-cell adenoma was also elevated in a dose-related manner (0/47; 3/47, 6%; 6/48, 13%, $P<0.029$).

Dose-related increases in nonneoplastic lesions were observed for male rats (nonspecific liver dilation) and for male and female rats (fatty metamorphosis and focal cellular change). Liver degeneration was present in 80% of the low dose and 60% of the high dose male mice but was not found in controls. Neoplastic nodules of the liver were observed at greater incidences ($P<0.002$) for low and high dose male rats as compared with controls (control, 1/50, 2%; low dose, 12/50, 24%, $P<0.002$; high dose, 25/50, 50%, $P<0.001$). Hepatocellular adenoma was increased in a dose-related manner in dosed female mice (3/50, 6%; 9/50, 18%; 12/50, 24%, $P<0.011$). Hepatocellular carcinoma was observed in greater incidence in dosed male mice (10/49, 20%; 33/50, 66%, $P<0.001$; 29/50, 58%, $P<0.001$) and in high dose female mice (1/50, 2%; 6/50, 12%; 11/50, 22%, $P=0.002$).

Male rats had a dose-related increase in kidney mineralization. Nephropathy was increased in dosed mice of both sexes; renal papillary mineralization was greater in high dose male and female mice than in the controls.

Other tumors that were elevated in exposed animals included adrenal pheochromocytomas in male mice (control, 2/48, 4%; low dose, 12/49. 24%, $P<0.006$; high dose, 14/49, 29%; $P<0.001$), alveolar/bronchiolar adenoma in female mice (1/50, 2%; 2/50, 4%; 6/49, 12%, $P<0.05$) and malignant lymphomas in female mice (13/50, 26%; 28/50, 56%, P-0.002; 29/50, 58%; $P=0.001$).

Low incidences of uncommon tumors were observed in dosed animals. This may be important because the historical control incidences are very low: i.e., bile duct adenoma in 1/50 high dose male rats (historical control, 0/3.633), transitional cell-papillomas of the urinary bladder in female rats (historical control, 3/3,644, 0.08%; low dose, 2/50, 4%; high dose, 1/50, 2%) and granulosa cell tumors of the ovary in female rats (historical control, 11/3,642, 0.3%; low dose, 3/50, 6%; high dose, 2/50, 4%).

Decreases in tumor incidence were observed for leukemia in male rats (control, 12/50, 24%; low dose, 6/50, 12%; high dose, 5/50, 10%, $P=0.048$) and alveolar or bronchiolar adenomas (combined) in male mice (12/49, 24%; 9/49, 18%; 3/49, 6%, $P<0.011$).

In summary, under the conditions of these studies, 4,4'-methylenedianiline dihydrochloride was carcinogenic for F344/N rats and B6C3Fl mice of each sex, causing significantly increased incidences of thyroid follicular cell carcinomas in male rats, thyroid follicular cell adenomas in female rats and in mice of each sex, C-cell adenomas of the thyroid gland in female rats, neoplastic nodules in the liver of male rats, hepatocellular carcinomas in mice of each sex, adenomas of the liver and malignant lymphomas in female mice, and adrenal pheochromocytomas in male mice.

In a study conducted by investigators at Oak Ridge National Laboratory (Ex. 1–262, 1985), 320 NIH C3H mice were dermally exposed to MDA in methanol 3 times per week for 104 weeks. The mice were divided into four groups of 40 males and 40 females per group. Group l received 4.5 mg of MDA/week, group 2 received 2.25 mg of MDA/week, group 3 received 1.12 mg of MDA/week and group 4 was treated with methanol only. At the end of 24 months there were 20 surviving animals in group 1 (14 males, 6 females); 24 surviving animals in group 2 (14 males and 10 females); 39 surviving animals in group 3 (25 males and 14 females) and 49 surviving animals in group 4 (24 males and 25 females). The investigators observed a dose related increase in the incidence or development of liver tumors at necropsy. Liver tumors were found in 95% of the males and 85% of the females in group 1, 75% of the males and 25% of the females in group 2, 55% of the males and 22% of the females in group 3, and 53% of the males and 11% of the females in group 4 (vehicle control).

Interpretation of these results was hampered by the absence of sufficient experimental detail upon which to base conclusions. For example, no histologic examination of any organs was performed, so tumors not grossly observable would have been missed. Nor was any statistical analysis provided. Nevertheless, these findings support the Committee's concern about the potential carcinogencity of MDA resulting from dermal absorption of the free amine.

Other studies support the findings of the NTP report. Schoental (Ex. 1–81, 1968) extracted MDA from the contaminated flour involved in the Epping Jaundice incident (Ex. 1–69). The investigator treated eight male and eight female weanling white rats by gavage. A liver hepatoma and a kidney tumor were observed in one male that received five doses of 50 mg MDA. An adenocarcinoma of the uterus was found in one female 24 months after the first dose. Pituitary tumors were observed in five females and one male. Breast tumors were found in two of the female rats. A control group was not used.

In that same study, Schoental administered one or two subcutaneous injections of 5–10 mg MDA to 12 white CRW mice. No tumors were observed at the site of injection when the mice were killed 7–18 months after the initial dose. Adenomas were found in four of the mice that received a second dose of MDA.

Steinhoff and Grundmann (Ex. 1–151, 1970) reported carcinogenic activity when MDA was injected subcutaneously into rats. Twenty-five male and twenty-five female Wistar rats were injected with 30–50 mg/kg of MDA up to a total dose of 1.41 g/kg at intervals of one to three weeks . A control group was injected with a saline solution. Among the MDA treated rats 33 malignant tumors, 29 benign tumors, and four hepatomas were observed. The control group had 16, 15 and 0 tumors, respectively.

In the first of two studies, Munn (Ex. 1–132, 1967) treated 24 male rats by gavage for 121 days with MDA dissolved in arachis oil delivering a total dose of 3.3 mg/g body weight. All test animals were found to have cirrhosis of the liver. No tumors were observed within the first two years of treatment. In the second study, rats were treated over an 18 month period with a total dose of 6 mg/g of MDA. Six tumors were found, the majority of which appeared more than two years after treatment began (two liver tumors, one intestinal tumor, one pituitary tumor, and two subcutaneous fibromas). No control groups were used.

Fukushima et al. (Ex. 1–63, 1979) fed five groups of male Wistar rats (ranging from 8 to 33 animals) 1,000 ppm MDA in their diet for 8, 16, 26, 32, or 40 weeks. Within each group, three to six rats were killed at eight-week intervals after cessation of MDA feeding until termination of the study at 40 weeks (when all remaining animals were sacrificed). A control group of eight rats was fed a basal diet for 40 weeks and then sacrificed. No tumors were found in any organ in any of the groups. The author stated that the study period was too short for a meaningful evaluation of carcinogenic response.

Griswold et al. (Ex. 1–66, 1968) evaluated the carcinogenicity of 35 aromatic amines including MDA. They gave 10 mg doses of MDA in (1 ml of sesame oil) by stomach tube to 20 female Sprague-Dawley rats at three-day intervals for 30 days. They also used a vehicle control group of 140 rats and a positive control group of 40 rats that were given a single dose of 18 mg of 7,12-dimethylbenz(a)anthracene, a known carcinogen. The investigators found no tumors in the MDA test animals which were observed for an additional eight months after treatment. Although the observation period was extended, it was considered too short to allow for carcinogenic evaluation.

The Committee also examined initiation and promotion studies. Fukushima et al. (Ex. 1–62, 1977) studied the initiator effect of MDA. Two groups of eight-week-old male Wistar rats were fed MDA (concentration unspecified) in their diets for eight weeks. After eight weeks, one group of 24 rats received a diet containing 1,000 ppm of MDA only. The second group of 30 rats were fed a diet containing 1,000 ppm of MDA and were given 12 weekly subcutaneous injections of 10 mg/kg 1,2-Dimethylhydrazine (DMH), starting two weeks after the discontinuation of MDA in the diet. A third group of 24 rats received an untreated diet and 12 weekly subcutaneous injections of 10 mg/kg DMH, starting at 18 weeks of age. A control group of 18 rats received an untreated diet. All rats were sacrificed after 52 weeks when they were about 70 weeks old. The MDA-treated groups had evidence of liver toxicity but no tumorgenic activity. This study suggests that MDA may not act as an initiator.

In 1984, results were reported of a study designed to test the cancer promotion potential of MDA following administration of 2,2'-dihydroxy-Nnitrosodipropylamine (DHPN), the initiator, using male Wistar rats (Ex. 1–14, 1984). The rats were placed into four groups of 21 each. Group 1 received a single IP injection of 2.8 g DHPN/kg by weight (bw) and then fed for 19 weeks with 1,000 ppm MDA in the diet; Group 2 received a single dose of 2.8 g DHPN/kg bw IP; Group 3, fed 19 weeks with 1,000 ppm MDA in the diet; and Group 4 (controls), a single dose of 5 milliliters (mL) of saline/kg bw IP. All the rats were killed after 19 weeks. A statistically significant incidence ($p<0.05$) of thyroid follicular cell carcinomas developed in the DHPN plus MDA-treated rats (Group 1), compared to the group treated with DHPN only (Group 2). Incidences were significantly different ($p<0.05$) between Groups 1 and 2. No tumors were reported in Groups 3 or 4. A carcinogenic response was not observed when the initiator or promoter was administered separately (Groups 2 and 3), but was observed when the initiator and promoter were administered sequentially (Group 1). Although the study was of short duration, the authors concluded that DHPN was the initiator and that MDA was the promoter.

(b) *Human Data.* In 1982, the National Institute for Occupational Safety and Health (NIOSH) provided a Health Hazard Evaluation (HHE) (Ex.1–255) of workers in the blade and pattern shop of a manufacturer of helicopter parts. The purpose of the evaluation was to determine whether workers were susceptible to an increase risk of cancer of the bladder and colon.

Two processes were performed at the facility: making blades and making parts. The part making process involves making a wooden mold of the part and lining it with successive layers of fibrous glass and epoxy resin (wet lay-up). In the blade making portion of this facility, fibrous glass impregnated with MDA-containing epoxy resin is cut to a pattern, spread on a honeycomb material, and baked in ovens.

Exposure measurements were taken of all chemicals to which the workers were exposed. Airborne concentrations of ethylenediamine and cyclohexanone were below their limits of detection (0.0005 mg/sample and <0.01 mg/m^3, respectively). Airborne concentrations of dust were 0.2 and 0.41 mg/m^3 in the pattern shop and ranged from 0.17 to 1.30 mg/m^3 (nine samples) in the blade shop Airborne concentrations of MDA ranged from below the limit of detection to 0.46 mg/m^3; methyl isobutyl ketone ranged from 2.75 mg/m^3 to 85.0 mg/m^3; toluene ranged from 1 to 4 mg/m^3; and butyl glycidyl ether ranged from <0.01 to 3.0 mg/m^3. All levels were below the applicable environmental criteria and OSHA standards.

Although exposure levels were measured at the time of the NIOSH study, there are no data on past levels of exposure to MDA or any of the chemicals present, which may have been considerably higher. Workers at this plant, both previous to and at the time the HHE was conducted were also exposed to a variety of other chemicals of unknown carcinogenic potential.

NIOSH also performed a Proportional Mortality Ratio (PMR) and a Proportional Cancer Mortality Ratio (PCMR) calculations. The PMR study, based on 502 deaths in white males known to the company death benefit fund, showed a statistically significant elevated proportion of deaths due to all malignant neoplasms and several subcategories of cancer. These, however, did not remain significantly elevated in the PCMR analysis, suggesting that these excesses may have been related to deficits or decreases in proportions of other causes of death.

When the analysis was limited to those who had ever worked in areas at risk from exposure to epoxy resins and hardeners, the excess proportion of deaths due to all malignant neoplasms persisted (although no longer statistically significant), and statistically significant excesses appeared for three specific sites. The PMRs for these sites were higher than in the analysis for all 502 deaths. The elevation of cancer of the bladder remained statistically significant in the PCMR analysis. The elevated PMR in the overall group can be attributed almost entirely to the excess deaths in the exposed group. In addition to the bladder cancer deaths identified, there were two bladder cancers observed among living MDA exposed groups.

There are several limitations associated with a PMR study. A potential for bias exists if causes of death are over or under represented in the data set. Over representation of causes of death results in reported excesses. Bias is also seen with PMR studies because by definition the cause-specific PMRs balance out to an overall PMR of 1.00 resulting in a "seesaw effect". For example, if one cause of death is lower than expected, then other causes will have PMRs generally in the opposite direction (e.g., a deficit of circulatory deaths result in cancer deaths appearing to be in excess). One way to control this source of bias is to exclude causes of death not of interest, i.e., by calculating the PCMR as was done in this study.

There are other limitations described by the authors of this study. Workers were potentially exposed to a number of chemicals other than MDA that could have contributed to the findings. Also the degree of the workers' exposures to MDA or any of the chemicals present is not known. Further, the findings are based on a small number of deaths and the duration of exposure and latency for the bladder cancer cases observed are shorter than those usually associated with occupationally or chemically induced tumors. In addition, one cannot discount the possibility of this being a chance cluster of cases to which attention has been focused through the Health Hazard Evaluation.

Although the data contained in this evaluation is insufficient to positively identify MDA as a human bladder carcinogen or to establish an acceptable permissible exposure limit, the authors developed a hypothetical relationship between MDA exposure and bladder cancer, indicating a need for further MDA epidemiology studies in which the more rigorous standardized mortality ratio (SMR) method is used.

D. Reproductive Hormonal Effects

Yamashita (Ex. 1–56, 1963) studied the adrenal-dependent effect of MDA on endometrial carbonic anhydrase. A marked increase in enzyme activity occurred after the subcutaneous injection of estradiol-treated female rabbits with 50–1,000 mg MDA over a four-day period. The degree of this response was proportional to the dose of MDA administered. As in the studies of Tullner (Ex. 1–164, 1960), this response appeared to be dependent upon the adrenal gland and was suppressed by cortisone. Yamashita suggested that a decrease in circulating adrenal corticosteroids resulted in an increase in ACTH and thus progestogen production. Cortisone exhibited its inhibition through suppression of this "feedback" loop.

In further studies, Yamashita and his associates (Ex. 1–85, 1969) also investigated the effect of MDA on the secretion of testicular 17-oxosteroids in male dogs. The injection of 20 iu/kg of human chorionic gonadotropin or 2,000 iu of pregnant mare serum resulted in an increase in the synthesis of 17-oxosteroids. However, when 20 or 60 mg/kg of MDA was injected into the animals, the effect of human chorionic gonadotropin or pregnant mare serum was decreased. This reversible inhibition was believed to be due to a blockage of androgen biosynthesis in the testes.

For similar purposes, Mieno et al. (Ex. 1–74, 1973) studied the effects of MDA on the secretory response of the canine testes to adenosine-3′,5′-monophosphate (AMP). When the testes of adult male dogs were injected with 10 mg of AMP, an increase in 17-oxosteroid secretion occurred. However, when the dogs were pre-treated with 20 mg of MDA, no 17-oxosteroids could be detected in the blood after AMP treatment. Thus, MDA appears to inhibit the stimulatory effect of AMP on the secretion of testicular androgens.

E. Teratogenic Effects

McLaughlin, et al. (Ex. 1–163, 1963) studied the teratogenic effects of MDA on chick embryos. Five milligrams of MDA were directly injected into the egg. Although more than 90% of the chicks hatched from treated eggs had a short mandible and leg damage, the significance of these results is not clear.

F. Mutagenic Effects

(i) In Vitro Effects

MDA has been reported by a number of investigators to be mutagenic in tests with Salmonella typhimurium strains TA–98 and TA–100 with metabolic activation (Godek et al., 1982; Rao et al., 1982; Parodi et al., 1981; Darby et al., 1978; and Brusick, 1976. While Brusick (1976) reported positive results with metabolic activation in a test on strain TA–1538, other investigators have found that MDA is not active in that strain or in strains TA–1535 and TA–1537, either with or without metabolic activation.

Results of NTP unpublished studies confirm previously reported results in *Salmonella tvphimurium* (Ex. 1–265). The NTP data also suggest that MDA induces sister chromatid exchange and chromosome aberrations in Chinese hamster ovary cells *in vitro*. Nunziata (Ex. 263, 1983), reported that MDA did not induce chromosome aberrations *in vitro* in cultured human lymphocytes. Results of an NTP L51784 *in vitro* mouse lymphoma forward mutation assay were weakly positive (Ex. 1–265). MDA caused a very weak increase in unscheduled DNA synthesis in rat hepatocytes *in vitro* at the limit of acceptable cytotoxicity (Mirsalis, et al. in press). Thus, MDA appears to have weak mutagenic potential *in vitro*.

According to a recent publication by Mirsalis et al. (Ex. 1–264), because this is a relatively insensitive test, a positive result obtained with this assay carries considerable weight of confidence, whereas a negative result carries very little.

Mirsalis et al. (Ex. 1–264, 1983), found only three of the compounds tested (one was MDA) were positive *in vitro* in the specific bacteria strains tested and suggested that only these three metabolized to genotoxic forms by hepatocytes *in vitro*.

(ii) In Vivo Effects

A sister chromatid exchange study by Parodi et al. (Ex. 1–267, 1983), yielded positive results of statistical significance using concurrent control data and the Mann-Whitney ranking test for significance. The non-parametric Mann-Whitney test was used because the distribution of the elution rate constant (k) was not normal.

Parodi et al. (Ex. 1–137, 1981) reported that MDA caused DNA strand breaks in a mouse liver *in vivo* study. Pantarotto (Ex. 1–266, 1983) reported low degree binding of MDA and its metabolites to mouse liver protein and DNA *in vivo*. MDA binding was ten times higher in protein than DNA, and the author did not address possible protein contamination of the DNA fraction.

Ho et al. (Ex. 1–67, 1979) reported that MDA did not test positively in an *in vivo* Drosophila sex-linked recessive lethal assay. However, this study does not assist in the interpretation of MDA *in vivo* effects since several carcinogenic amines are also reported to give similar results in this assay.

Mirsalis et al. (Ex. 1–268, 1985) reported that MDA did not increase unscheduled DNA synthesis in mouse hepatocytes. The authors also reported that MDA did not increase the number of rat or mouse hepatocytes in the S-phase.

G. Structural Activity Relationships

Benzidine and methylenebis (ortho-chloroaniline) (MBOCA) have been used by EPA as structural analogues of MDA. The methylene bridge between the aromatic rings is absent in benzidine and MBOCA has a chlorine in the ortho-position. Benzidine is a recognized bladder carcinogen in humans (IARC, 1979). MBOCA has demonstrated the ability to produce bladder cancer in dogs, MDA has produced bladder cancer in rats.

MBOCA was used to predict the biological behavior (absorption across biological membranes) of MDA in the risk assessments performed by both EPA and OSHA. Recent data on the absorption of MDA through the skin (guinea pigs, rats, and monkeys) are now available, and OSHA's risk assessment has been modified to include a new dermal absorption rate calculated from analysis of this data. The rate of absorption is actually about 2%/hr for MDA rather than 1%/hr estimate and assumed through the MBOCA comparison.

H. Absorption, Distribution and Deposition

(i) Gastro-Intestinal Tract Penetration

There are no quantitative data describing the rate of gastro-intestinal track absorption of MDA; however, the ability of MDA to be absorbed through the human gastro-intestinal tract was clearly demonstrated in the Epping Jaundice Incident (Ex. 1–69 1966). Based on arguments that MDA is a structural analog of MBOCA, the EPA calculated a gastro-intestinal rate of 50%. In the absence of quantitative data for MDA, the Committee has decided to base its calculation of risk on an absorption of 100%. This is consistent with the absorption rate used by OSHA in its risk assessment.

(ii) Respiratory Tract Penetration

No data are available regarding the penetration of MDA or its metabolites through respiratory tract tissue. But based on physicochemical properties and on the knowledge that MDA penetrates other biological membranes, it can be reasonably assumed that when MDA reaches the alveolus, it will be absorbed by the circulatory system and lung tissue as well.

A critical factor in estimating the potential for penetration of substances through lung tissue is particle size. Particles of MDA greater than 5 microns in size will not be expected to reach the alveolus where extensive absorption will occur; however, such material could still reach systemic circulation due to the capillary-laden nature of the nasopharyngeal region. Particle sizes greater than 2 microns, but less than 5 microns, will deposit primarily in the upper respiratory tract, where very little may be absorbed through the alveoli. Clearance by mucocilliary movement, with subsequent swallowing and absorption via gastro-intestinal tract tissue, may represent a significant route of absorption.

Particle sizes less than 2 microns are likely to reach the alveolus and, because of their lipid solubility, cross the alveolar membrane. MDA in the vapor phase can be expected to penetrate lung tissue fairly well. This conclusion is based on knowledge that MDA can cross other biological membranes and on its solubility characteristics. It is reasonable to assume that 50% of inhaled MDA can be absorbed through the lungs.

(iii) Dermal Penetration

Evidence of MDA skin penetration can be found in the data provided by the Oak Ridge National Laboratory study, in which test animals developed liver tumors after MDA was applied to their skin.

Additional evidence of the ability of MDA to be absorbed by humans can be found in reports by Vaudaine et al. (Ex. 1–235, 1982), Williams et al. (Ex. 1–83, 1974), McGill and Motto (Ex. 1–73, 1974), and Brooks (Ex. 1–57, 1979). These investigators either reported that MDA was found in the urine of industrial workers who were exposed to the chemical or that various toxic exposure manifestations occurred in industrial settings. Additional evidence of absorption of MDA by humans is supplied by Kopelman et al. (Ex. 1–68, 1966a, Ex. 1–69, 1966b), who reported cases of liver toxicity among people who had eaten MDA contaminated bread.

Recent MDA absorption, distribution, and excretion data indicate that many of the early assumptions concerning dermal absorption rates were reasonable (Ex. 1–251).

El-Hawari, et al. (Ex. 1–251, 1986) dermally treated groups of six male rats, groups of six male guinea pigs, and four male monkeys with low doses of ^{14}C–MDA. In one series of experiments, ^{14}C–MDA treated areas in rats and guinea pigs were washed 5 to 10 minutes after treatment with either soap and water or acetone and water. In monkeys and a group of rats the treated areas were washed after 24 hours. After washing, the animals were housed in individual cages and excreta was collected over a 4-day period (rats and guinea pigs) or 7-day period (monkeys). At sacrifice, the skin from the application areas (from rats and guinea pigs only) was removed, extracted with methanol, and then solubilized. Radioactivity was measured in the wash solutions, in excreta, and in the solubilized skin. Results from the three species showed that higher and more consistent recoveries were obtained by washing the treated areas with soap and water versus acetone and water. Twenty-four hours or more following application, dermal penetration of ^{14}C–MDA was extensive in the three animal models examined. MDA was distributed throughout the body, and was eliminated readily in urine and feces. When only the amount of radioactivity found in excreta or in blood was considered in determining dermal absorption, the rats demonstrated the highest absorption followed by the guinea pigs and the monkeys. When the amounts of radioactivity associated with the skin as well as that in excreta and in blood were considered in calculating MDA dermal absorption, rats, guinea pigs, and monkeys demonstrated comparable absorption rates.

Comparisons of total excretion were made since the amount of radioactivity excreted in urine and feces differed in the three species. Results from the monkey study where the treated areas were washed 24 hours following treatment and the excreta collection period was extended to 7 days, was directly compared to groups of rats and guinea pigs in which the dose was also removed at 24 hours following application. Respectively, 25%, 41%, and 47% of the applied doses could be washed off at 24 hours in rats, guinea pigs, and monkeys. Total amounts of radioactivity excreted in urine and feces during 96-hour periods were 53%, 28%, and 18% in rats, guinea pigs, and monkeys, respectively. These data indicate comparable absorption rates in monkeys and guinea pigs and higher absorption rates in rats. Maximum percent absorption occurred in animals following continuous treatment with the low dose and when the application areas remained occluded. These maximum amounts averaged 54% in rats and 30% in guinea pigs during a 96-hour period. In monkeys, the maximum absorption rate (determined by urinary and fecal elimination only) averaged 21% of the applied doses in 168 hours. The total amounts excreted in urine and feces and recovered in tissues provided the more accurate estimates of dermal absorption than the amounts obtained by measuring urinary excretion and correcting for recovery from the parenterally administered doses. Assessment of absorption rate based on recovery of ^{14}C in blood and/or tissue only did not provide accurate measurements of the amounts absorbed because of analytical uncertainities.

In rats, increasing the applied dose 10 times resulted in a decrease (from 54.5% to 6.6%) of percent of dose absorbed. Also in guinea pigs, absorption decreased from 29.9% after the low dose to 7.9% after the high dose. Occlusion of the skin increased MDA dermal absorption in rats (11.9% versus 7.0%), but had no effect on its dermal penetration in guinea pigs (3.2 versus 3.4%). However, the studies performed to assess occlusion were limited to 6-hour sampling periods and, therefore, definitive conclusions could not be reached. When skin treated with ^{14}C–MDA was washed immediately with soap and water or acetone and water, as little as 53% was recovered in the washing solutions. A post-exposure wash at 6 hours, 24 hours, and 96 hours removed less of the applied material. The results indicate that post-contamination washing cannot remove all MDA from the skin and that absorption is independent of dose.

I. Summary of Health Effects of Occupational Exposure to MDA and the Committee's Recommendations

(i) Acute Effects of Exposure to MDA

(a) *Hepatotoxicity.* The record evidence on the acute effects of occupational exposure to MDA, indicated that occupational exposure to MDA results in hepatotoxicity. An abundance of human and animal data support this finding (see Hepatotoxicity section).

The available animal data also indicate that the liver is the main target organ. However, adverse effects on the kidneys, spleen, and lungs of test animals were also observed

Chronic dosing of dogs with MDA also resulted in occasional weight loss, moderate to severe gross and micropathological changes in the liver, slight to moderate changes in the kidneys and spleen, and occasional gross or micropathological changes in other organs such as lungs or uterus (Ex. 60, 1978).

The Committee agreed that the literature suggests that one or a few exposures to high doses of MDA results in a characteristic toxic hepatitis in humans, namely intrahepatic cholestasis. In most cases, it was not possible to prove that only a single exposure to MDA preceded the onset of symptoms; however, in almost all cases, onset occurred within 2 to 10 days of exposure. In all cases, hepatitis was reversible.

The Committee also reviewed the record evidence to determine the levels of exposure at which a No Observed Effect Level (NOEL) could be expected to occur in a worker population. The available literature on workers occupationally exposed to MDA provided limited data on the occupational doses to which the workers were exposed. This is due in part to a lack of sampling data but more often because the primary mode of exposure was through the skin and not through inhalation. The Committee further acknowledged that MDA, unlike many acutely toxic chemicals which are associated with acute inhalation effects such as irritation and pulmonary edema, the major acute toxicity of MDA has been liver damage following ingestion or skin absorption. The only available data the Committee could use to estimate a

NOEL for liver toxicity due to occupational exposure to MDA are the data reported by Kopelman et al. from the Epping Jaundice incident. Converting the oral dose ingested by the affected individuals to an inhalation dose results in a 15-minute airborne concentration of approximately 84 ppm ($3 \text{ mg/kg} \times 70 \text{ kg} / 0.3125 \text{ m}^3 = 672 \text{ mg/m}^3$). Applying a 100X protection factor to this calculation would result in an assumed NOEL of approximately 8,400 ppb. The Committee recognizes, based on establishing a 10 ppb PEL, that an 8-hour TWA of 10 ppb would translate into a 0.32 ppm (320 ppb) STEL since there are 32 15-minute divisions in an 8-hour day. While the Committee recognized that workers may be permitted to be exposed to very high levels of MDA before liver toxicity occurs, the Committee could not ignore the risk posed by the carcinogenic potential of MDA and it is for this reason that the Committee recommended a STEL of 100 ppb. The Committee believes this level to be technologically achievable.

(b) *Dermal Irritation.* The Committee believed that the ability of MDA to induce contact sensitization has not been studied sufficiently to conclude that MDA causes sensitization. The compound has elicited a sensitization response in dermatitis patients industrially exposed to a mixture of MDA and bis(4-cyclohexylisocyanate) (Emmett Ex. 1-61, 1976) and leg ulcer patients exposed to MDA and other diamines, such as p-phenylenediamine (Ex. 1-71, 1973), and challenged with MDA. Levy (Ex. 124) reported cases of rashes on the arms and forearms of workers handling insulation materials containing MDA; however, the cause of the rash could not be linked solely to MDA exposure. The NIOSH Health Hazard Evaluation (Ex 1-255) also noted a high incidence of skin disorders in workers exposed to epoxy resins that contained MDA. None of the available literature positively linked MDA with the prevalence of skin disorders in the observed populations.

(c) *Retinal Effects.* The Committee also concluded that direct contact between MDA and the eye as well as ingestion should be avoided. The record evidence indicated that direct contact can result in damage to the eye.

Ingestion of MDA has also been shown to produce eye damage in test animals. One incident of ingestion of MDA along with other chemicals also produced eye damage (Ex. 1-259).

(ii) Chronic Effects of Exposure

(a) Hepatotoxicity. The Committee has examined the record evidence of the chronic effects of MDA exposure and concludes that at the present occupational levels the observed non-neoplastic effects of exposure to MDA appear to be totally reversible (See hepatoxicity discussion). This conclusion is based on review of the data found in the acute human studies. Animal data indicated that long term MDA dosing at low levels produced various levels of liver damage, but since most of the studies involved the dosing of the animals until sacrifice, it is difficult to determine if the observed effects would or could have been reversed if sufficient time had been allotted for healing.

(b) Carcinogenicity. The Committee has reviewed all the record evidence and concludes that MDA is a carcinogen in F344/N rats and B6C3F1 mice of each sex. The NTP bioassays clearly demonstrate a significantly increased incidence of thyroid follicular cell carcinomas in male rats, thyroid follicular cell adenomas in female rats and in mice of each sex, C-cell adenomas of the thyroid gland in female rats, neoplastic nodules in the liver of male rats, hepatocellular carcinomas in mice of each sex, adenomas of the liver and malignant lymphomas in female mice, and adrenal pheochromocytomas in male mice.

Data presented by investigators at the Oak Ridge National Laboratory revealed a dose related increase in the incidence of liver tumors in both sexes of mice following dermal application of MDA, however, histopathological examination or statistical analysis were not conducted.

The Committee considered extensively the type of data needed to determine carcinogenicity in animals and to relate the observed effects in animals with that expected in humans. The Committee generally accepted the policies set forth by Public Health Agencies, that test results in mammalian species, including the mouse, are acceptable data for predicting potential hazards to exposed humans.

The Committee also recognized that confounding factors associated with long term bioassays could cause carcinogenicity findings to be questioned. The Committee recognized the need to use control groups, as was done in the NTP and ORNL bioassays, and to validate the carcinogenic findings in rodent species that normally exhibit a high spontaneous incidence of tumors.

The Committee also discussed the effect that high dosing and subsequent acute toxicity may have on the production of liver and thyroid tumors found in the female mice of the NTP study. Industry representatives believed that the observed liver and thyroid tumors were a result of high exposures, and stated:

> Genotoxic carcinogens cause changes in DNA which lead to tumor formation; traditional risk assessment models using linear extrapolation are appropriate for genotoxic carcinogens. However, non-genotoxic carcinogens cause tumors by an indirect effect. For example, if MDA is followed by an increase in cell division, tumors can result from the increase in cell division. The studies performed at SRI by Mirsalis confirm that MDA causes an increase in cell division; these results are evidence that MDA acts upon the liver through a non-genotoxic, indirect mechanism. Where a substance acts in this manner, there is a threshold dose below which the observed effects do not occur. We therefore suggest that linear extrapolation is inappropriate for these liver tumors because a threshold dose would exist below which no cell death or increase in division would occur and no tumors would result.
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> In our judgement, a similar situation exists with regard to the thyroid tumors. MDA is an analogue of antithyroid drugs which cause compensatory hyperplasia leading to benign tumor formation, followed by progression to malignant tumors if the treatment is continued. This is a non genotoxic mechanism. The studies by Hiasa et al. (1984) confirm that MDA was a promoter, not an initiator of thyroid tumors.
>
> While MDA is genotoxic in some test systems in *vitro*, it has not been shown to be genotoxic *in vivo*. The NTP bioassays employed high doses. It is highly probable that non-genotoxic mechanisms served to greatly increase the tumor incidence at high doses in liver and thyroid. These inflated incidences when used in extrapolation to low doses result in greatly overestimated risk estimates.

The Committee noted that the presence of tumor viruses in mice does not necessarily invalidate the identification of MDA as a carcinogen. In making this determination, the Committee made use of the policies advocated by numerous health agencies, including OSHA which require that to make a viral etiology finding, the virus must be established to be the sole direct mechanism producing the carcinogenic effect. Representatives from industry suggested that the observed lymphomas in the B6C3Fl strain of mouse might be due to a viral etiology. The evidence provided by these Committee members was, however, insufficient to permit such a finding.

Finally, a majority of the Committee members concluded that MDA induces cancer by a genotoxic rather than a non-genotoxic mechanism. Genotoxicity can be characterized by the ability of the chemical, in this case MDA, to cause DNA damage or mis-repair, or incomplete repair. There is also evidence that a large number of molecules of an carcinogen is not needed to cause DNA damage. Non-genotoxicity, on the other hand, is thought to occur when the detoxification mechanisms of the body are overwhelmed, reactive metabolites are free to interact with DNA, RNA, protein, and lipids. This is thought to occur when high doses are administered. This may cause increased cell-division leading to tumor formation. A genotoxic mechanism supports the theory that cancer can originate from a minute foci or a single cell. The theory that a threshold level effect exists before cancer induction appears, is supported by a non-genotoxic mechanism.

Industry representatives maintained that the high doses of MDA administered to the rats and mice in the NTP bioassays resulted in metabolic saturation which produced the tumors by a non-genotoxic mechanism. The intrahepatic cholestasis produced by MDA which, unlike obstructive jaundice, results from the action of MDA on the liver lends support to their theory. Furthermore, the industry representatives believed that additional evidence also supports the conclusion that MDA is non-genotoxic *in vivo:*

> A majority of the *in vitro* mutagenicity studies indicate that MDA is weakly mutagenic. However, the *in vivo* mutagenicity data are inadequate to characterize MDA's *in vivo* effects. The Mirsalis *in vivo* UDS studies are negative, indicating that the increase in liver tumors in animal studies is likely not due to DNA damage. More important, the Mirsalis data show increases in cells in S phase in both mice and rats. This finding is significant because it indicates that MDA causes liver toxicity followed by an increase in cell division. Increases in cell division can cause tumors by a nongenotoxic mechanism. A nongenotoxic mechanism for liver tumors is further supported by the study of Fukushima et al. (1977). The Mirsalis data along with the Fukushima studies are the basis for industry's conclusion that the liver tumors seen in the NTP bioassay are not due to a genotoxic mechanism.

Many of the Committee members were sceptical of the data furnished to support the threshold theory and thus required that certain criteria must be met if this theory were to be adopted. First, the members required that if a threshold was to be considered, data indicating at what level a threshold would occur must be provided. Secondly, once the threshold was established in experimental animals, the threshold must be shown to be applicable to any exposed group of workers.

The Committee concluded that the evidence offered for the existence of thresholds for this carcinogen was insufficient to overcome the extant evidence for a genotoxic mechanism.

In addition, the Committee also believed that even if a threshold for specific carcinogens could be demonstrated in experimental test animals or even in a specific human population, it might not be applicable to any given human population at risk. No data were furnished which equated a threshold observed in animals with that expected in humans.

Other concerns raised by some of the Committee members involve the use of MDA dihydrochloride rather than MDA itself as the administered dose in the NTP bioassays. On analysis, the Committee found that MDA dihydrochloride was used because MDA is only slightly soluble and relatively unstable toward oxidation in water (0.1 g/100 g of water) whereas the dihydrochloride salt is much more soluble and stable in water (the exact solubility is unknown but based on the NTP bioassay the solubility is at least 1% in water).

Furthermore, MDA–2HCl in the drinking water will remain stable in the stomach which is strongly acidic (about pH 1–2). When MDA–2HCl enters the intestines, it will be in an alkaline environment and thus readily converted to the free amine, MDA. Thus the Committee believed that the free amine of MDA was absorbed from the intestines and is the suspect carcinogenic agent. The Committee also found that in the NTP drinking water study, all drinking water used for the control animals was adjusted with 0.1 N HCl to the pH of the 300 ppm MDA–2HCl formulation (3.7).

The Committee noted that test animals in the Oak Ridge National Laboratories study were exposed dermally to MDA and not the hydrochloride as in the NTP study. Furthermore, the Committee noted that in these test animals the carcinogenic response seen in the female mouse livers was approximately double that noted in the NTP study. Significant tumor incidence occurred in three dose groups, one of which was approximately one-sixth of the dose used in the NTP study. Cumulatively these findings lend more support to the dose-response determination for MDA in predicting carcinogenicity.

The Committee also examined supportive evidence of carcinogenicity derived from short-term tests. *In vitro* MDA has been reported by a number of investigators to be weakly mutagenic in several bacterial strains. NTP data also suggest that MDA induces sister chromatid exchanges and chromosomal aberrations in Chinese hamster ovary cells and increases unscheduled DNA synthesis in rat hepatocytes. Mirsalis et al. also found that only three compounds tested (MDA was one) were positive *in vitro* and suggested that only these three metabolized to genotoxic forms by hepatocytes *in vitro. In vivo* tests have reported sister chromatid exchanges (Ex. 1–137) and DNA strand breaks (Ex. 1–266) and binding in mouse liver.

The Committee recognized that the various short-term tests do not measure the same mutagenic endpoint; thus positive and negative findings are not uncommon, since no single short-term test can measure all the events which might lead to mutagenicity. The Committee agreed that there is a wide variety of opinions on the reliability of using short-term studies as indicators of carcinogenicity. Many of the Committee members believe, however, that such tests provide meaningful indicative results and that substances which give positive results in well-validated systems are likely to be carcinogenic. Further, it appears that the probability of a false positive result for a chemical which is positive in one well-conducted bioassay and one well-validated short-term test is extremely small.

The Committee determined that MDA causes cancer in experimental animals, and a majority concluded that the mechanism is genotoxic. The Committee then analyzed the data to relate the findings of "pooled tumors" incidence in mice to some common site in man. The Committee acknowledged that scientific investigations have shown that target sites for carcinogenic action of a substance in humans are not necessarily the same as those found in animal experiments. There were basically three pieces of suggestive evidence examined by the Committee to link the carcinogenic response in animals to the expected response in humans (bladder cancer):

(1) Human Data: the NIOSH-Vertol Health Hazard Evaluation (HHE) study (Ex. 1–255).

(2) The presence of bladder transitional cell papillomas in three MDA treated rats in the NTP-Bioassay (Ex. 1–36).

(3) Some structure-activity links with the proven human and animal bladder carcinogen, benzidine, and the dog bladder carcinogen, methylenebis-(2-chloroaniline) (MBOCA).

The only available human data implicating MDA as a human carcinogen was the NIOSH-Vertol HHE. The Committee reviewed this data thoroughly before concluding that the data was insufficient to positively identify MDA as a human bladder carcinogen or to use the data contained in this report to establish permissible exposure limits. However, the Committee did not exclude the fact that the report did develop a hypothesis regarding MDA exposure and bladder cancer which warrants further investigation using the more rigorous epidemiologic methods.

The Committee also found that the development of bladder transitional cell papillomas in the female rats in the NTP bioassays to be significant. These relatively rare tumors were benign although progression to malignancy in this class of tumors may occur. Furthermore, the Committee recognized that the appearance ot transitional cell papillomas in MDA treated rats was unique and demonstrated the chemical specificity of the results observed.

The Committee also analyzed the structural activity relationship between MDA and several other substances identified by EPA as structural analogs. A majority of the Committee members maintained that there are significant structural differences between benzidine and MDA and that analogy does not exist. For example, the bridge between the phenyl rings of benzidine allows a co-planar configuration whereas the linking methylene carbon in MDA is tetrahedral and the phenyl rings are thus not co-planar. Further, the methylene group in MDA tends to block electron delocalisation, which would reduce the resonance stabilization of a nitrenium ion, a probable "ultimate carcinogen" of benzidine. These structural differences can result in large quantitative differences in the biological activity of MDA and benzidine. These Committee members thus believe that the reactivities of the respective metabolites of MDA and benzidine are likely to be different, even if qualitatively and quantitatively similar metabolites are formed. Thus they contend that data applicable to benzidine, whether human or animal, cannot be applied to MDA and that to conclude that MDA by structual analogy to benzidine is capable of producing bladder cancer in humans is erroneous. Furthermore, they state that since sufficient data exists on MDA, it is unnecessary to apply benzidine data.

The Committee generally believes that, while the structural analogy data are not conclusive, nonetheless these data suggest that MDA may cause bladder cancer in humans. Although the Committee could not positively link occupational exposure to MDA with bladder cancer in workers, the Committee is recommending stringent standard provisions to protect workers against the carcinogenic potential posed by MDA regardless of the target site.

(iii) Reproductive Effects

The Committee reviewed all available data associated with the reproductive effects of exposure to MDA. The majority of the Committee members concluded that, while the data suggest that there may be hormonal changes at relatively high doses, the occupational significance of these changes can not be assessed.

(iv) Teratogenic Effects

The Committee has reviewed the data on the teratogenic effects of exposure to MDA and can not relate the significance of these observed effects in animals with those anticipated in the occupational setting.

(v) Absorption, Distribution, and Deposition

The majority of the Committee members agreed that where sufficient data exists which is MDA specific (e.g., dermal absorption data), that this data should be used to determine the biological activity of the chemical. However, the Committee found that data obtained through the El-Hawari study was not sufficient to make determinations concerning the gastro-intestinal and respiratory absorption of MDA. The Committee anticipates that future research on the gastrointestinal and respiratory absorption of MDA will also substantiate the findings made from the structural analogue comparisons and demonstrate that these assumptions are also conservative.

The Committee agreed that 100% absorption through the gastro-intestinal tract be used in generating the risk assessment. The Committee realizes that this is a conservative approach which could have the effect of reducing the expected risks from occupational exposure to MDA by 50%. In presenting the Committee's recommendations for risk, both 50% and 100% gastro-intestinal tract absorption has been considered and the associated risk have been provided in the risk assessment tables.

Furthermore, the Committee agreed with EPA's assumption that absorption through lung tissue is roughly equivalent to gastro-intestinal absorption (50%), especially if MDA is in the vapor phase or has a particle size of less than 2 microns.

Third, it appears from a comparison of the absorbed doses over the period of absorption that MDA is actually dermally absorbed at approximately 2% per hour and not 1% as previously assumed (Ex. 1–251), therefore an absorption rate of 2% can also be applied to MDA exposure. The Committee has examined risk using both 1% and 2% dermal absorption rates. (Ex. 1–269)

Fourth, data submitted from the Oak Ridge National Laboratory study heightened the Committee's concern over the potential for dermal absorption of MDA by workers. It can be assumed that when a chemical is ingested, it is transported through the hepatocellular detoxification system and is not generally diluted as a result of passing through the general circulatory system. In the case of chemicals applied to the skin, however, a significant dilution takes place as a result of the absorbed chemical passing through the general circulatory system before passing through the hepatocellular detoxification system. Compared with the findings of the NTP study, the Oak Ridge data reported almost a 2 fold increase in the liver tumor incidence observed in the female test animals. These findings are additional evidence that occupational dermal exposure to MDA should be prevented.

In addition, the findings of El-Harawi (Ex. 1–251) indicate that once deposited on the skin, MDA can not be completely removed by cleansing. The data suggest that the use of solvents to remove MDA from the skin increases the absorption of MDA. It also appears that soap and water provides the best media for removing the substance from the skin, but only removes approximately 50% of the material deposited on the skin. These findings support the provisions of the recommended standard which require the use of personal protective clothing and equipment to prevent MDA exposure.

(vi) Committee's Recommendation

These studies raise sufficient concern to support a decision to regulate MDA as a suspect human carcinogen. Furthermore, MDA is a potent hepatotoxin, and accidental exposure to high levels of MDA can result in acute hepatotoxicity. Therefore, the Committee has concluded that permissible exposure limits should be established and dermal contact with MDA prevented.

IV. Risk Assessment

A. Background

The Committee considered the rationale and basis for performance of quantitative risk assessments by both EPA and OSHA. The Committee evaluated the relevance of the results of the animal studies to anticipate outcomes in man and agreed that the results from high dose exposed animals could be used to model anticipated outcomes in humans exposed at lower doses.

The Committee agreed that it was plausible to do a quantitative risk assessment for occupational exposure to MDA and examined the various assumptions used in the OSHA and EPA risk assessments. The Committee subsequently determined the appropriateness of their assumptions in making risk estimates. Also included in the results of the Committee's discussion is a description of EPA's and OSHA's risk assessments, an analysis of their significance, and the Committee's recommendations for assessing the risk posed by exposure to MDA.

B. Rationale and Basis for Quantitative Risk Assessment

(i) Qualitative Evaluations

The earlier carcinogenicity studies on MDA were deemed to be unsuitable for risk assessment because of inadequate study design or incomplete reporting. The Oak Ridge National Laboratory Study (ORNL), although adequate to show that MDA exposure appears to increase the development of liver tumors or their incidence following dermal exposure of C3H mice, is unsuitable for use in making risk assessments. This determination was based on the absence of histopathological and statistical analyses of this data. Further, it should be noted that the ORNL study was a skin absorption test for numerous chemicals and as such did not follow the standard protocol for bioassays.

The NTP bioassays for carcinogenicity of MDA in rats and mice were judged to be of suitable quality for use in risk assessment calculations. The results of the NTP bioassays were considered to be qualitatively relevant to man. It was assumed that the dose response relationship in man is similar to that in the mouse, although the target organ or organs in humans are not necessarily the same.

The combined tumor incidences used in the "worst case" analyses have been used for the risk calculations presented in this Committee report. The risk calculations used data from the NTP study on female mice, and pooled all statistically significant increased tumors which included hepatocellular tumors, lung tumors, thyroid tumors, lymph node tumors, malignant lymphomas, and the combined incidences of benign and malignant neoplasms.

(ii) Quantitative Evaluations

The rationale and basis for quantitative risk assessment, reviewed and recommended by the Committee, are consistent with the basic concepts and approaches used in making risk assessments by OSHA and other government agencies. Risk estimates must be made by using mathematical models to estimate dose responses at low exposure levels from known dose responses at higher exposure levels. These models include linear extrapolations and other models that deviate from linearity. The selection of a particular model may be justified by biological processes or by statistical measures of "fit" to available data points. A review of the principles of risk assessment from the statistical standpoint has been published (Krewski and Van Ryzin, 1981).

Whatever model is selected, it is assumed that they reflect real biological processes. However, to date, only a few biological factors have been quantitatively defined for specific chemicals, thus, they are not routinely incorporated into existing mathematical models. Some biological factors that play important roles in the dose-response and modeling process are: (1) The sensitive tissue(s); (2) dose of the material delivered to the sensitive tissue(s); (3) the nature of the response(s); (4) rates and sites of biotransformation; (5) toxicity of metabolites; (6) cumulative nature of the material or its actions; (7) pharmacokinetic behavior of the material; (8) the effect of biological variables such as age, sex, species and strain of test animal; and (9) the effect of the manner and method of dosing the test animals.

The model most frequently employed by OSHA for extrapolation from an observed dose response at high exposures to predict tumor incidence at low doses is the linearized multistage model of Crump. This model yields a risk-dose relationship that is linear at low doses. The predictions resulting from the use of this model are conservative (EPA Guidelines for Carcinogenic Risk Assessment, September 1986).

The study design of NTP bioassays for carcinogenicity uses only two exposure levels in additional to a control. This limits the range of mathematical models that can be used [*e.g.*, a probit model cannot be used (EPA Risk Assessment)]. The multistage model is designed to accommodate the complex dose response curve that is expected from a "multistage" mechanism of carcinogenesis. The best use of this model would be for data describing the response at a number of exposure concentrations. However, this flexibility can only be displayed where appropriate data points contribute to the model. The NTP bioassay results used by EPA and OSHA provides two data points at adjacent, very high dose levels and is suitable for use with this model.

Initially, some industry Committee members presented arguments advocating the use of models other than the linearized multistage model. They argued that since very little is known concerning the mechanism by which MDA may induce cancer that the multistage model overestimates the true risk. The representative from EPA stated that the EPA had tried other models and that the data fit the linearized multi-stage model best. Furthermore, in an "explanatory" discussion concerning the use of the linearized multi-stage model, an expert, provided by the industry Committee members, acknowledged that the linearized multi-stage model was the only model that could be used with the available data but cautioned the Committee to recognize that the estimates of risk obtained from this model are conservative. He further stated that the recognized conservatism achieved from use of this model results from its assumption of no threshold for carcinogenicity. He further elaborated and stated that these conservative results may be a manifestation of liver toxicity that occurred throughout the two year study and that this liver toxicity led to liver tumor development through a non-genotoxic mechanism. He stated that this theory was supported by not only general evidence of hepatotoxicity but also apparent evidence of a weak genotoxic MDA. In particular the negative *in vivo* mouse and rat liver unscheduled DNA synthesis (UDS) assays and positive S-phase repair responses lend support for this mechanism (Ex. 1–264, Mirsalis 1986). Also the finding by Fukushima that MDA may not be an "initiator" of liver cell tumors (Ex. 1–62, Fukushima et al. 1977) suggests that MDA may act as a promoter secondary to hepatotoxicity. Thyroid tumor incidence is used in the risk calculations. MDA is goitrogenic, and it is well established that an induced thyroid insufficiency can lead to compensatory follicular cell hyperplasia, and ultimately, tumor development. This mechanism was discussed as a possibility in the report of the NTP bioassays and is compatible with the observation that MDA may "promote" the development of thyroid tumors (Ex. 1–14, Hiasa *et al* 1984). Thus toxicity may have contributed wholly or in part to the increased incidence of thyroid tumors at the high dose levels of MDA used in the NTP studies. The significance of these mechanisms of carcinogenicity is that, at the high doses used in the NTP studies, a component of the MDA related liver and thyroid tumor incidence may be attributable to initial toxicity. As MDA dose diminishes, the contributions of toxicity would be expected to fall rapidly with a consequent reduction in tumor incidence. The multistage model might well fit such a pattern but the NTP bioassay does not provide the data at low exposure levels to make such a determination.

Public health policy dictates that when definitive data do not exist to demonstrate a threshold, the more conservative, non-threshold approach is used to estimate risk. The Committee agreed with this approach and recommended adoption of the assumption of no threshold effect to generate risk estimates for expected occupational cancer cases resulting from exposure to MDA. The Committee also agreed that given the limitations of the existing data, the linearized multi-stage model restricted to one stage is the correct model to be used.

The Committee recognized that this model is likely to lead to an overstatement of the true risk and thus, errors on the side of safety. Using this model, estimates of the risks at various points along the dose response curve were made.

C. EPA's Risk Estimates

The Committee reviewed EPA's risk assessment (Ex. 1–3 a,b,c), since the data base and basic assumptions are also those used in OSHA's risk assessment. However, this discussion of the EPA risk is presented only as background information to be used in determining the appropriateness of the assumptions made by OSHA.

In order for EPA to make the dose conversion from the oral intake in mice to the potential dermal and inhalation intake in humans, it was necessary to assume the extent of absorption of MDA following administration as the MDA-dihydrochloride in drinking water.

The MDA-dihydrochloride is expected to exist in an ionized form in the acid medium of the stomach of rodents and in this form would not be readily absorbed in the stomach. When MDA–2HCl enters the intestine, it will be in an alkaline environment which converts from the amine dihydrochloride to the free amine, MDA. As the free amine form, MDA is expected to be rapidly absorbed by the intestines. The physico-chemical properties and comparatively rapid skin absorption of MDA support this conclusion.

The observation that the major route of elimination of labelled ^{14}C–MBOCA was fecal (Morton *et al* 1981) led EPA to assume that 50% of an oral dose of MDA would be absorbed. However, the finding by El Harawi *et al* (Ex. 1–251) that the products of dermally administered ^{14}C–MDA are largely eliminated in feces indicates a high degree of biliary excretion.

EPA concluded, based on an analogy with MBOCA, that the skin absorption measurements in animals indicated an MDA skin absorption rate of 1% per hour.

The amount of MDA retained during inhalation will depend on the physical form of the MDA, whether vapor or particulate and the size of any particles. It is probable that particles of MDA remaining on the nasal, buccal or respiratory mucosa will be absorbed either at the site or following ingestion of mucus. Not all inhaled MDA will be retained and an absorption of 50% of the inhaled material has been assumed. This is the same retention factor assumed by EPA, OSHA, and by the Committee in their risk assessments.

EPA made several assumptions regarding human exposure to estimate total lifetime average daily doses (LADDs) and ultimately human carcinogenic risk. The LADDs were calculated for each combination of exposure concentration, exposure duration, frequency and extent ot exposure, and percent absorption. The LADDs were then used to calculate the increased lifetime carcinogenic risk for a single individual. The curves were derived usinq a multi-stage model and "pooled" tumor incidence data on all tumors that occurred in the female test animals of the NTP bioassay at statistically significant rates.

Originally, eight different exposure scenarios were examined by EPA to estimate the risk posed by various workplace situations (Ex. 1–3 a,b,c). They include one MDA/MDI manufacturing example and seven possible MDA user/processing exposure patterns. In every scenario except one, EPA used existing monitoring data to estimate dermal and inhalation exposure. The major differences among the EPA's user/processing cases were in the assumed duration of dermal exposure before washing and in the use of protective equipment. In the one case that did not use monitoring data, an 8-hour TWA exposure level of 1 ppb (0.0081 mg/m^3) was assumed in order to estimate the risk associated with this level of atmospheric exposure with very low dermal exposure.

EPA used pooled individual tumor sites to evaluate the risks to exposed workers. Pooling tumor sites increased the risk estimates in each case by approximately a factor of two. Industry representatives questioned the use of pooled tumor sites and arqued that liver tumor incidence should be omitted from the estimates for both animal species in the NTP study. Furthermore, they argued that these tumors were produced by a non-genotoxic mechanism and the use of these tumors escalates the risk estimates by a factor of two. The majority of the Committee members disagreed with this sub-group's position and feel that the record evidence indicated that a genotoxic mechanism for MDA is plausible; even while non-genotoxic factors may also be at work in the thyroid possibly in advance of genotoxicity. MDA does not act primarily throuqh a non-genotoxic mechanism. Furthermore, a majority of the Committee agreed that, provided that scientific experience and judgment are used, the induction of mouse liver tumors can be used as an indicator of carcinogenicity as reliably as tumors arising at other sites or in other species. The Committee agrees that the pooling of tumor sites does increase the risk estimates by a factor of two. EPA reported the risk estimates as a range, depending upon the selection of tumor site, test animal, and statistical confidence level (maximum likelihood estimate or upper 95% confidence limit). The results of EPA's risk assessment for various scenarios are presented below:

1. MDA/MDI Manufacturing

For the approximately 300 workers exposed for 8 hours per week or less, the risk assessment indicates increased lifetime cancer risk levels ranging from about 7 in 10,000 to about 1 in 1,000. For the 9-to-20-hours-exposure-per-week group, numbering about 150 workers, the risk levels range from about 2 in 1,000 to about 2 in 100. For the group of approximately 150 workers who work 40 hours per week, the risk levels range from about 2 in 1,000 to about 5 in 100.

2. MDA Use/Processing

For the workers who may be exposed for 8 hours per day during a 40-hour week in facilities that use or process MDA under conditions where no protective clothing is used, and little or no attention is paid to washing off MDA that might be deposited on the skin, the individual lifetime risks could be in the range of 1 in 100 to 2 in 10. The risks would be even higher if dermal exposure occurs for longer times than assumed or over greater body area than the arms, neck, and face.

If workers handle MDA while wearing latex gloves for 6 hours per day during a 40-hour work week without any hand washing during the day, the estimated excess lifetime cancer risk would range from about 1 in 1,000 to about 2 in 100.

The majority of the workers exposed to MDA are expected to handle MDA only briefly during the workday. Even under these circumstances, they can experience a wide range of estimated risks from dermal exposure, depending on how promptly they wash off any deposited material. If MDA can be removed within 15 minutes of exposure the estimated increased lifetime risk levels ranging from about 5 in 100,000 to about 8 in 10,000. If removal is delayed for 6 hours, the estimated risk levels rise from about 1 in 1,000 to about 1 in 100.

3. Hypothetical Workplace Standard

EPA has estimated the risk to workers exposed under the conditions of a workplace standard, based on 10 hours per week of dermal exposure and 40 hours per week of inhalation exposure at l ppb (0.008 mg/m^3). Assuming the use of appropriate protective clothing and good industrial hygiene practices, the estimated increased lifetime risk levels would range from about 2 in 100,000 to about 4 in 10,000.

D. OSHA's Risk Assessment

(i) Background

The quantitative risk assessment performed by OSHA (Ex. 1-247), like the risk assessment performed by EPA is based upon the results of National Toxicology Program (NTP) bioassay (Ex. 1-18 a,b,c). The model used to extrapolate from the data of the animal study into the estimated human exposure range a one-stage version of Crump's linearized multi-stage model. Human response to these exposures was estimated from the pooled incidence of selected tumors in female mice.

OSHA examined several possible exposure scenarios for lifetime occupational exposure to MDA through inhalation and dermal deposition. The exposures that were assumed in the risk estimation were based on monitoring data and hypothetical constructions of a variety of workplace situations. Both the maximum likelihood estimate (MLE) and the upper 95% confidence limit of risk were calculated. The predictions of risk are presented in Table VI-1.

The incidence of the statistically significant tumors from the bioassay study are reported as sex/species aggregates. Since there was a greater incidence of tumors among the female mice, the results from that group were used in calculating OSHA's risk assessment. In making the quantitative estimates of risk, OSHA made the following assumptions:

1. The dose response in animals is similar to that in humans.
2. The mathematical model selected holds for doses outside the range of observation.
3. There is no threshold.
4. The absorption through the gastrointestinal tract for the rats and mice is 100%.
5. The target organ in test animals is not necessarily the same as the target organ in humans.
6. The product of the concentration of MDA-2HCL (150-300 ppm) in drinking water and the quantity of water consumed daily (5.0 gm) in milligrams divided by the average animal's body weight in grams (38.0 gm) can be used to estimate dose.
7. Correction for surface areas can be used in estimating human dose from one animal species to another.
8. The daily occupational dose from inhalation is 50% absorption of MDA through the lungs at a respiration rate of 1.2 m^3/hr.
9. The worker's lifetime risk (through age 74) was calculated based on exposures of 8 hours per day, 5 days per week, 46 weeks per year for 45 years working lifetime starting at age 20.
10. The daily occupational dose from dermal exposure is directly proportional to deposition rate, absorption rate, body surface areas determined by Snyder et al. (Ex.), and ½ of the square of exposure time (per shift).
11. Deposition rate of MDA from dermal exposure is uniform over time and absorption through all skin areas occurs at a uniform rate of 1% per hour.

The actual calculations, derived from the NTP data, and on which the OSHA risk assessment is based are not provided in this document but are available in the OSHA exhibit (Ex. 1-269).

(ii) Summary of Risk Assessment

Table VI-1 (Ex. 1-247) summarizes the estimated excess occupational lifetime cancer risks for workers exposed 8 hours per day, 5 days per week, 46 weeks per year for 45 years starting at age 20 to various airborne and dermal concentrations of MDA. Total daily doses are based upon accumulations of either inhalation or dermal exposures or a combination of both. Case I presents the risk attributed to workers exposed to MDA/MDI manufacturing, which is based on actual exposure data. Case II is a hypothetical situation, which presents the potential risks in manufacturing/processing even if no dermal exposure occurs. Case III presents the risks associated with the five atmospheric exposure levels OSHA is considering as PELs and the existing TLV. These scenarios assume no dermal deposition and absorption, a situation which seems unlikely. The following is a summary of the various scenarios:

Scenario I(a)

Workers exposed to airborne concentrations of 0.57 mg/m^3 (70 ppb) and exposed dermally to concentrations of 9.0 μg/cm^2/hr (on the palms) and 2.5 μg/cm^2/hr (on the forearms and upper body) would receive a total daily exposure of 0.062 mg/kg/day with 0.021 mg/kg/day from inhalation and 0.041 mg/kg/day through dermal (palms, forearms, and rest of upper body) exposure. The excess cancer risk calculated for this worker population would be 6 extra cancer cases per 100 workers or approximately 60 per 1,000 workers [upper 95% confidence limit (U95CL)] and 5 per 100 or approximately 50 per 1,000 [maximum likelihood estimate (MLE)].

Scenario I(b)

In Scenario (b) the workers would be exposed to airborne levels of 0.38 mg/m^3 (46 ppb) and due to poor hygiene practices, to a dermal deposition rate as high as 250 μg/cm^2/hr (palms only) and 27 μg/cm^2/hr on the forearms, and upper body. These dermal and airborne exposure levels would yield a total average daily dose of 0.222 mg/kg/day, with 0.014 mg/kg/day from inhalation and 0.208 mg/kg/day from dermal absorption. This total daily dose in turn would result in an excess lifetime cancer risk of two in ten, or approximately 200 cancer cases per 1,000 workers (MLE) and (U95CL).

Scenario II(a)

Scenario II(a) was constructed to assess the effects of dermal deposition by assuming no inhalation exposure and 4.2 μg/cm^2/hr dermal exposure (palms). The total lifetime exposure was calculated at 0.0021 mg/kg/day with the only exposure being 0.0021 mg/kg/day dermal absorption. The estimated occupational lifetime excess cancer risk was 2 per 1,000 workers (MLE and U95CL).

Scenario II(b)

Scenario II(b) also assessed the effects of dermal deposition by assuming no inhalation exposure and 2.1 μg/cm^2/hr dermal exposure (palms). The total daily exposure was calculated at 0.0010 mg/kg/day. The estimated lifetime cancer risk in this worker population was estimated to be 8 and 9 per 10,000 (MLE and U95CL) or approximately 0.8 and 0.9 per 1,000 workers.

Scenario III(a)

Scenario III(a) was designed to assess the effects of inhalation of MDA in the absence of any dermal exposure. No dermal exposure was assumed and an inhalation exposure of 0.01 mg/m^3 for 8 hours per day over a 40 hour work week. A total daily exposure of 0.00036 mg/kg/day was accumulated. The estimated risk at this proposed exposure limit was 3 per 10,000 (MLE and U95CL) or approximately 0.3 (MLE and U95CL) per 1,000 workers.

Scenario III(b)

Scenario III(b) considered no dermal exposure and an inhalation exposure of 0.001 mg/m^3 for 8-hours per day over a 40 hour work week. This level was equivalent to a lifetime average daily dose of 0.000036 mg/kg/day and was estimated to result in an excess lifetime cancer risk of 3 per 100,000 (U95CL and MLE) or approximately 0.03 (U95CL and MLE) per 1,000 workers.

Scenario III(c)

Scenario III(c) also assumed no dermal exposure and an inhalation exposure of 0.0001 mg/m^3. The total lifetime exposure was calculated at 0.0000036 mg/kg/day and the estimated risk from this lifetime exposure was calculated as 4 per 1,000,000 (U95CL) and 3 per 1,000,000 (MLE) or approximately 0.004 (U95CL) and 0.003 (MLE) per 1,000 workers.

Scenario III(d)

Scenario III(d) assumed no dermal exposure and an inhalation exposure of 0.16 mg/m^3 (20 ppb) which results in a lifetime average daily dose of 0.0057 mg/kg/day which predicted an excess lifetime cancer risk of 4 (MLE) to 5 (U95CL) per thousand.

Scenario III(e)

Scenario III(e) assumed conditions at the current airborne ACGIH TWA of 0.8 mg/m^3 (100 ppb) with no dermal exposure. This gave a total lifetime average daily dose of 0.029 mg/kg/day and an estimate of excess risk of 2 (MLE) to 3 (U95CL) per 100, or 20–30 per 1000 workers.

Scenario III(f)

In Scenario III(f). the amount of MDA in the air that will cause an excess risk (MLE) of one per thousand was determined to be 0.28 mg/m^3 (3.5 ppb) assuming no dermal exposure.

In summary, OSHA concluded from the risk estimates provided in Table VI-1 that the reduction in cancer risks resulting from lowering the dermal and the airborne exposures would be significant.

E. Committee's Recommendation

The Committee agreed with OSHA and EPA that both the qualitative evaluations and the quantitative (models) used to predict risk were reasonable. Furthermore, the Committee accepted as reasonable the exposure scenarios set forth by OSHA in its risk assessment. Thus, Scenario I examines the occupational risk expected from ambient and dermal exposure for which observed occupational exposure values have been recorded. Scenario II presents the risk expected from no ambient exposure and the lowest dermal deposition reported. Scenario III presents the risks associated with PEL's being considered for regulatory purposes.

The Committee, however, questioned the appropriateness of using some of OSHA's assumptions, and as such, made requests to have risk assessments reflecting additional assumptions made. Thus, each exposure scenario and the accompanying occupational exposure cases were examined with respect to the effect the various risk assumptions would have on the number of expected cancer deaths resulting from exposure. The assumptions considered were:

(1) 50% or 100% GI tract absorption;

(2) Surface area or nonsurface area corrected;

(3) Two 4-hour work shifts for ambient exposure and one ten-hour work shift for dermal exposure;

(4) 1% and 2% dermal absorption rates and that in the absence of data, the Committee also assumed that absorption rates for dusts and vapors are the same;

(5) Intermittent and short-term exposure durations;

(6) Risk estimates developed by using the ORNL data; and

(7) Risks associated with some dermal exposure at low atmospheric levels of MDA.

It was found that the excess cancer risks calculated using a surface area correction factor (SAC) were 10-fold less than those calculated without correction for SAC. Increasing the absorption rate from 1% to 2% doubled the excess cancer risk estimates. The assumption of dermal absorption over one ten-hour shift generally doubled the risk calculated when assuming airborne exposure for two four-hour shifts.

The ORNL data for hepatocellular neoplasms alone generated risk estimates roughly equivalent to those generated using the NTP pooled tumor data. When dermal deposition at low ambient MDA levels is assumed, the excess risk doubles in comparison with the results from the assumption of risk with no dermal deposition as a result of airborne exposure. Manufacturing and processing dermal deposition rates differ, in that deposition is determined by the amount of material which is airborne. Manufacturing operations typically are well controlled and do not have the higher ambient MDA concentrations found in processing operations. When manufacturing dermal deposition rates are used rather than processing dermal deposition rates, the risks predicted are 20 times lower than those predicted from dermal deposition rates associated with processing.

Some of the Committee members also requested that risk estimates be made from the Oak Ridge National Laboratories data. These data were produced from a chronic dermal toxicity and skin tumorigenicity study of four test materials in mice. One of the test materials was MDA (applied as both the mixture and in the pure form using methanol as a solvent.) The results of the study, i.e., percent of animals with hepatocellular neoplasms with pure MDA, were compared with results from a control population which received skin applications of methanol alone. The model used to extrapolate from the data of the ORNL animal study to the estimated human exposure range was the single-stage version of Crump's multi-stage model. The Chi Square Goodness of Fit statistic was 10.8826 ($p<0.001$). Risk scenarios were developed from these data using the assumptions discussed above.

The scenarios with the various assumptions and the estimates of expected excess cancer risk resulting from use of these assumptions can be found in Tables 1–48. Table 5 summarizes the comparison of expected risks, assuming 100% GI absorption, 1–2% dermal absorption rates, and doses with and without surface area correction (SAC). Table 10 displays the expected risks associated with 50% GI absorption, using the same assumptions of Table 5. Table 15 summarizes the excess cancer risks using an extended dermal exposure time (one-10 hour shift) and using the assumptions of Table 5. Table 16 summarizes tables 5, 10, and 15 allowing for a comparison of each of these estimated cancer risks. Table 21 summarizes the results obtained using the ORNL data to estimate risk. Table 22 displays the findings developed from the ORNL data with the findings of the NTP data. Table 28 displays the results using intermittent exposures. Tables 29–48 display risks associated with dermal deposition and absorption of MDA through the upper body, forearms, neck, and head, at hypothetical ambient air levels of 20ppb, 10ppb, 1ppb, and 0.1 ppb, for manufacturing and processing of MDA. Dermal deposition rates on the upper body were calculated by direct linear extrapolation from observed data (Scenario Ia and Ib, Table VI–1). That is, if at 46 ppb MDA in air (0.38 mg MDA/m^3), 27 μg MDA/cm^2/hr are observed to deposit on the skin of the upper body at 1 ppb, it is expected that about 0.5 μg MDA/cm^2/hr would deposit.

Table 49 represents the risk estimates which the Committee found most reasonable to estimate the expected cancer deaths which might result from occupational exposure to MDA. All tables can be found in Exhibit 269. The summary tables for each assumption permit comparison of the effect each assumption will have on predicting risk. The following is a discussion of the summary tables and the effect each assumption has on the estimates of risk:

(1) 50% or 100% GI tract absorption

The Committee compared the estimates of risk associated with using either 50% or 100% GI absorption and found that using 50% GI absorption results in approximately a two-fold increase in the number of cancer cases expected per 1,000 workers. For example, by comparing tables 1 and 6, 2 and 7, 3 and 8, and 4 and 9, risks of 50 and 90, 4 and 8, 70 and 100, and 6 and 10 respectively are found. Thus, using 100% GI absorption would result in the reporting of the lower number of expected cancer deaths per 1,000 workers.

(2) Surface area or non surface area corrected

The Committee also noted that using a surface area correction factor increased the number of expected cancer deaths per 1,000 workers by a factor of approximately 10. For example, by comparing Table 1 with 2, 3 with 4, 5 with 6, and 7 with 8, respective risks are: 50 and 4, 70 and 6, 90 and 8, and 100 and 10, respectively.

(3) Two 4-hour work shifts for ambient exposure and one 10-hour work shift for dermal exposure

The Committee examined the risk estimates which assume that 10 hours of dermal exposure are allowed and find that the risk estimates are generally doubled when 10 hours of dermal exposure is compared to two 4-hour ambient exposure periods. For example, when comparing table 1 with 11, 2 with 12, 3 with 13 and 4 with 14, the risks per 1,000 workers are: 50 and 100, 4 and 8, 70 and 100, and 6 and 20, respectively. Thus, allowing more time for dermal absorption per shift increases the number of expected cancer deaths per 1,000 workers.

(4) 1% and 2% dermal absorption rates

The Committee reviewed the risk assessments which were developed using either 1% or 2% absorption rates. The Committee noted that varying this assumption caused a doubling in the number of expected cancer deaths per 1,000 exposed workers where the dermal route is the only route of absorption. In the absence of data, the Committee also assumed that the absorption rates for vapors and solids are the same.

(5) Intermittent and short term exposure durations

The Committee examined the risk assessments which were developed making the assumptions that employee exposure varied from 3 days per week to 21.5 weeks/year. As expected the Committee noted that the number of expected cancer deaths per 1000 exposed workers decrease significantly as the duration of exposure decreased.

(6) Risks associated with using the ORNL data

The Committee reviewed the risk assessments which were done using the ORNL data and concluded that the ORNL findings are consistent with the NTP findings.

(7) Risks associated with assuming some upper body dermal absorption

The Committee reviewed the risk assessments which assume some degree of upper body dermal absorption and find, as expected, that there is an increased number of cancer deaths, depending on whether manufacturing or processing is involved and which absorption rate (1–2%) or dose conversion (SAC. NONSAC) is used.

Initially, the Committee agreed to report the findings of risk associated with occupational exposure to MDA as ranges which vary depending upon the assumptions used.

Having analyzed all the data and the respective scenarios with their varied assumptions the Committee agreed that it was impractical to consider risk as ranges for the purpose of establishing permissible exposure limits, in that the ranges of risk and the associated permissible exposure limits varied too greatly. However, having examined all of the scenarios and the varied assumptions, the Committee believes that the following assumptions and risk estimates will offer the best description of occupational risk associated with worker exposure to MDA:

1. Qualitatively, the dose response in animals is similar to that in humans (See Carcinogenicity Explanation).
2. The mathematical model selected was assumed to hold for doses outside the range of observation (See Rationale for Making Quantitative Risk Assessment).
3. There is no threshold for effect (See Carcinogenicity Explanation).
4. Gastro-intestinal absorption for rats and mice was assumed to be 100% (See Absorption Section).
5. The target organ in test animals is not necessarily the same as the target organ in humans (See Carcinogenicity Section).
6. Average amount of MDA–2HCl containing water consumed daily (5.0 gm) divided by the average animal's body weight in grams (38.0 gm) can be used to estimate dose.

The Committee recognizes that OSHA calculated the exact weights of the animals used in the NTP study rather than using a standard weight for the animals which was done by EPA. The Committee agrees that it is more accurate to use the exact weights rather than an assumed weight.

7. Body weight conversion is used for extrapolating from animal data to humans.

The Committee recognizes that there is much scientific controversy over the use of surface area scaling factors for conversion of doses from animals to man. Expert groups and some regulatory agencies like FDA have advocated a body weight approach, based on existing evidence that carcinogenic activation occurs far more rapidly in rodents than in humans and some even indicate that a surface area correction factor is often times over-conservative (Reitz, *et al.* 1982; Crump, *et al.* 1980; Hoel *et al.* 1975; Freireich *et al.* 1966.) The Committee recognizes that risk estimates calculated on a body weight basis without an SAC factor applied are lower (See Tables Not Surface Area Corrected), however, the Committee has found no evidence that indicates use of surface area correction is more biologically correct for MDA exposure. Currently, there are no existing pharmacokinetic studies, although the Committee was given the protocol for a study in progress. Furthermore, the Committee noted that EPA advocates the use of the surface area correction factor because it represents a more conservative approach to risk assessment, but does not require that this scaling factor be used because it is more scientifically appropriate. The Committee also noted that OSHA traditionally uses estimates based on body weight conversions. and applied the surface area scaling factor in the MDA risk assessment for the first time. The Committee recognized that OSHA relied heavily on the risk assessment done by EPA in completing its own assessment and the rationale used by EPA in using this surface area scaling factor in its assessment of risk. However, the Committee believes that no evidence has been presented which indicates that it is appropriate to use the surface area scaling factor and therefore, recommends the use of body weight.

8. The daily occupational dose from inhalation was based upon 50% absorption of MDA through the lungs at 1.2 m^3/hr respiration rate (See Absorption Section).

9. The daily occupational dose from dermal exposure was assumed to be directly proportional to deposition rate, absorption rate, body surface areas determined by Snyder *et al.* and ½ of the square of exposure time (per shift). Size of surface areas exposed can be found in Appendix F.

10. Deposition rate of MDA from dermal exposure was assumed to be uniform over time and absorption through all skin areas to be at a uniform rate of 2% per hour of deposited material (See Absorption Section).

11. The worker's lifetime risk (through age 74) was calculated on exposures of 8 hours per day, 5 days per week, 46 weeks per year for 45 years starting at age 20.

This last assumption was a controversial issue for some of the Committee members who advocated the use of actual exposure hours to make risk estimates. The Committee did, in fact, generate several Tables depicting exposure scenarios ranging from 3 days to 21.5 weeks/year. Nonetheless. the Committee agreed to recommend that 8 hours of exposure be used to generate risk estimates. The Committee recognizes, however, that this assumption might lead to risk estimates that greatly overstate the risks to workers exposed to MDA for less than 8 hrs per day.

There are several reasons why the Committee took this position. In most industrial settings and other work environments, employee exposures to harmful substances are regular and long term in nature. Based upon the limited data presently available, however, the Committee believes that a substantial number of employees may be exposed to MDA on a somewhat irregular or intermittent basis. A wide variety of factors makes it difficult to account for these highly intermittent exposure patterns in a quantitative manner. There is no widely accepted risk model presently in use which takes into account the effects of intermittent exposure. There may be elimination or deactivation of MDA to some extent when it is introduced into the system in small quantities at infrequent intervals. Also very little deactivation or repair may occur despite of relatively sporadic exposures. Such a highly intermittent exposure pattern may, at least theoretically, allow for the repair of damaged systems or cells. These factors may result in a greater reduction of risk than a model simply adjusted for decreased exposure time might reflect. Therefore, the Committee feels that limitations in the available data and science are such that a credible quantifiable extrapolation of risk for intermittent exposure to MDA is not possible at this time.

Secondly, the Committee recommends that occupational exposure data reflect an 8-hour day, a 40 hour work week, over a 45 year working lifetime. These three assumptions are also standard OSHA policy assumptions. OSHA has come under some criticism for relying on these assumptions. It is charged that OSHA errs toward over-prediction of risk by assuming, without substantiation, that workers will experience exposures at the PEL of the standard for up to 45 years. While theoretically possible, the Committee agrees it is not the workplace norm for workers to be exposed for 8 hours per day, 40 hours per week for a 45 year period. However, when determining whether a hazardous substance poses a significant risk and that reduction of a PEL is warranted, the Committee realized that OSHA is bound to consider what degree of risk would be permitted by the existing standard, even though many workers may in fact be at lesser risk because their exposures are to levels below or of a shorter duration than those required by that standard. The Committee recognizes that it is for this reason that OSHA bases its determinations of significant risk on the assumption that exposure at the PEL occurs throughout the entire workday.

I11Thirdly, the Committee acknowledges that the use of the lifetime exposure (45-year) assumption is based on guidance given in the OSH Act. As specified in section 6(b)(5):

> The Secretary in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life.

OSHA believes that it is reasonable to assume that a person begins work at age 20 and continues until the age of 65, a 45 year span of employment. Under section 6(b)(5) of the Act, OSHA is compelled to promulgate standards that ensure that employees, even those exposed to the hazardous agent for their entire working lifetime, are at the lowest risk that can feasibly be attained. Therefore, OSHA's determinations of significant risk must take into account the fact that many workers may be exposed throughout their entire working lives, and reflects the view that OSHA is regulating workplace conditions and not specific employees.

Another reason for using an assumption of lifetime exposure is that this method permits comparison of the risks from MDA exposure to the risks posed by other substances that OSHA has regulated or proposes to regulate. Such comparisons are useful to the Agency in ensuring that a consistent policy underlies OSHA's determinations of significant risk. Because the Agency has determined significance of risk in previous rulemakings based on the lifetime exposure assumption, the use of shorter exposure duration for calculating the risk of MDA-induced disease would preclude the Agency from making such comparisons.

Having set forth this set of assumptions the Committee recommended that OSHA use the risk estimates found in Table 49 which the Committee believes present reasonable estimates of the risks associated with occupational exposure to MDA. These assumptions are: (1) 100% GI absorption, (2) 2, 4 hr work shifts, (3) 2% dermal absorption rate, (4) non-surface area correction factor and (5) upper body absorption set forth in Scenario III. The following is a discussion of the scenarios which underlie Table 49, the Committee's recommended risk assessment table.

Scenario I(a)

Workers exposed to airborne concentrations of 0.57 mg/m^3 (70 ppb) and exposed dermally to concentrations of 9.0 μg/cm^2/hr (on the palms) and 2.5 μg/cm^2/hr (on the forearms and upper body) would receive a total daily exposure of 0.0959 mg/kg/day with 0.021 mg/kg/day from inhalation and 0.0749 mg/kg/day through dermal (palms, forearms, and rest of upper body) exposure. The excess cancer risk calculated for this worker population would be 6 extra cancer cases per 1,000 [upper 95% confidence limit (U95CL)] and 7 per 1,000 [maximum likelihood estimate (MLE)].

Scenario I(b)

In Scenario (b) the workers would be exposed to airborne levels of 0.38 mg/m^3 (47 ppb) and to a dermal deposition rate as high as 250 $\mu g/cm^2/hr$ (palms only) and 27 $\mu g/cm^2/hr$ on the forearms, and upper body. These dermal and airborne exposure levels would yield a total daily exposure of 0.4326 mg/kg/day, with 0.014 mg/kg/day from inhalation and 0.4186 mg/kg/day from dermal absorption. This total daily exposure in turn would result in an excess lifetime cancer risk of three in one hundred, or approximately 30 cancer cases per 1,000 workers (MLE and U95CL).

Scenario II(a)

Scenario II(a) was constructed to assess the effects of dermal deposition by assuming zero inhalation exposure and 4.2 $\mu g/cm^2/hr$ dermal exposure (palms). The total lifetime exposure is calculated at 0.0041 mg/kg/day with the only exposure being 0.0041 mg/kg/day dermal absorption. The estimated occupational lifetime excess cancer risk is 3 per 10,000 workers (MLE).

Scenario II(b)

Scenario II(b) also assesses the effects of dermal deposition by assuming zero inhalation exposure and 2.1 $\mu g/cm^2/hr$ dermal exposure (palms). The total daily exposure was calculated at 0.0021 mg/kg/day. The estimated lifetime cancer risk in this worker population is estimated to be 1 and 2 per 10,000 (MLE and U95CL) or approximately 0.1 and 0.2 per 1,000 workers.

Scenario III(a)

Scenario III(a) is designed to assess the effects of inhalation of MDA of 0.01 mg/m^3 per 8 hours per day over a 40 hour work week and assumes a dermal deposition rate of 0.03 $\mu g/cm^2$ per hour over the upper body regions. A total daily exposure of 0.00123 mg/kg/day would be accumulated. The estimated risk at this proposed exposure limit would be 8 per 100,000 (U95CL) and 9 per 100,000 (MLE) or approximately 0.08 and 0.09 (U95CL and MLE) per 1,000 workers.

Scenario III(b)

Scenario III(b) considers an inhalation exposure of 0.001 mg/m^3 with a dermal deposition rate of 0.003 $\mu g/cm^2$ per hour over the upper body regions. This level is equivalent to a lifetime average daily dose of 0.00012 mg/kg/day and was estimated to result in an excess lifetime cancer risk of 7 per million (U95CL) and 9 per million (MLE) or approximately 0.007 and 0.008 per 1,000 workers.

Scenario III(c)

Scenario III(c) also assumes an inhalation exposure of 0.0001 mg/m^3 with a dermal deposition rate of 0.0003 over the upper body. The total lifetime exposure was calculated at 0.000012 mg/kg/day and the estimated risk from this lifetime exposure was calculated as 7 per ten million (U95CL) and 9 per ten million (MLE) or approximately 0.0007 (U95CL) and 0.0008 (MLE) per 1,000 workers.

Scenario III(d)

Scenario III(d) assumes an inhalation exposure of 0.16 mg/m^3 (20 ppb) with a dermal deposition rate of 0.6 $\mu g/cm^2$ per hour over the upper body. This results in a lifetime average daily dose of 0.0247 mg/kg/day which predicts an excess lifetime cancer risk of 2 (MLE) to 2 (U95CL) per thousand exposed workers.

Scenario III(e)

Scenario III(e) assumes a total lifetime exposure of 0.01235 mg/kg/day with a dermal deposition rate of 0.3 $\mu g/cm^2$ per hour over the upper body. This results in an excess lifetime cancer risk of 8 (MLE) to 9 (U95CL) per thousand exposed workers.

The Committee would also strongly recommend that OSHA note the significance that dermal absorption has on worker exposure to MDA. The Committee has recommended the establishment of stringent provisions regarding the use of personal protective equipment to prevent dermal exposure to MDA, however, the Committee recognized that in some cases total prevention might require the use of "space suits". However, the Committee recognized that such a requirement is impractical; workers cannot be expected to work under such conditions. The Committee believes that suitable gloves can be used to prevent absorption through the palms (major route of exposure) and that aprons, coveralls, etc., can also prevent dermal contact in the body areas they cover. Nonetheless, the Committtee recognizes that some exposure may occur through deposition and subsequent absorption of MDA on the upper body, neck, etc., and as such would recommend that consideration be given to these confounding factors when establishing levels of risk. The Committee's recommendations reflect an awareness of the increased risks associated with these dermal exposures. Adherence to permissible exposure limit, use of personal protective clothing and equipment, and the other standard provisions aid in preventing dermal exposure to the greatest extent feasible.

V. Significance of Risk

OSHA previously made a preliminary finding of significant risk resulting from occupational exposure to MDA in responding to EPA's referral. The risk estimates accepted by the Committee fit the framework applied by OSHA in making policy decisions leading to the determination of significant risk in previous rulemakings. In view of this fact, the Committee recommends a standard which will reduce the risk resulting from occupational exposure to MDA.

Several of the Committee members proposed excluding the significant risk finding. Industry Committee members argued against including this section in the Committee's recommended standard for the following reasons:

> (1) A "significant risk" finding is a legal conclusion based on scientific considerations. OSHA must make such a finding as a prerequisite to promulgating a new standard under Section 6 (b) of the Occupational Safety and Health Act, interpreted by the U.S. Supreme Court in Industrial Union Department v. American Petroleum Institute, 452 U.S. 490 (1981). The Agency must analyze the issue, applying its institutional scientific and legal resources. It must then publish its conclusions in the preamble to the standard *OSHA* proposes. We do not believe that the Agency's obligation can properly be transferred to the Committee.
>
> (2) Moreover, such a finding is outside the Committee's authority and cannot be made without violating the Committee's groundrules which specifically provide that "Policy matters mandated by the Occupational Safety and Health Act or previously adopted by the Agency are not subject to negotiation." The determination of "significance of the risk" is a policy matter contemplated by this groundrule. Significantly, several Committee members have frankly admitted that they do not fully understand risk assessment or the justification for a finding of significant risk. To present "conclusions" regarding significance of the risk in conventional language drawn from OSHA's preambles for past standards and attribute it to "the Committee" is neither justified nor necessary.

Representatives from OSHA, EPA, and the State of California, while they accepted the decision of the majority of the Committee regarding the language proposed by the Committee for this section, nonetheless they were concerned with the Committee's failure to state precisely that a significant risk exists at current MDA occupational exposures. These Committee members emphasized that at the current occupational levels MDA represent a significant risk and they independently recommend that OSHA regulate occupational exposure to MDA.

The language recommended for this significance of risk section takes into consideration the sensitive nature this particular recommendation poses. Furthermore, the Committee was provided the policy and past practices of OSHA by the OSHA representative who was also a participant in these mediated rulemaking proceedings.

The Committee was guided by a number of factors that are consistent with recent court interpretations of the OSH Act and rationale, and policy formulation. As prescribed by Section 6(b)(5) of the OSH Act, the Committee examined the body of "best available evidence" on the toxic effects of MDA to determine the nature and extent of possible health consequences resulting from workplace exposure. A quantitative risk assessment was performed and considered with other relevant information by the Committee to determine whether establishing a permissible exposure limit and other standard provisions would substantially reduce the risk.

For guidance in determining whether regulatory activity would substantially reduce the risk, the Committee recognized that OSHA had followed some general guidance given to the Agency by the Court for arriving at findings of the significance of an occupational health risk. The Court stated as follows:

> It is the Agency's responsibility to determine in the first instance what it considers to be a "significant" risk. Some risks are plainly acceptable and others are plainly unacceptable. If, for example, the odds are one in a billion that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2% benzene will be fatal, a reasonable person might well consider the risk significant and take appropriate steps to decrease or eliminate it (IUD v. API 448 U.S. at 655).

Although the Court's example is based on a quantitative expression of the risk, the Court indicated that the significant risk determination required of OSHA is not "a mathematical straitjacket," and that "OSHA is not required to support the finding that a significant risk exists with anything approaching scientific certainty." The Court ruled that "a reviewing court [is] to give OSHA some leeway where its findings must be made on the frontiers of scientific knowledge [and] . . the Agency is free to use conservative assumptions in interpreting the data with respect to carcinogens, risking error on the side of overprotection rather than underprotection" [448 U.S. at 655, 656].

OSHA largely bases its findings that a particular level of risk is "significant" on policy considerations (IUD v. API, 448 U.S. 655, 656, n.62). The Committee recognized that OSHA had relied upon both the Court's directives and OSHA policy in making its findings on significant risk.

As part of the significant risk determination, the OSHA representative has examined a number of factors consisent with OSHA's policy (Arsenic, 48 FR 1864, January 14, 1983). These include the type of the risk presented, the quality of the underlying data, the reasonableness of the risk assessments, and the statistical significance of risk.

The Committee reviewed the toxicological and epidemiological literature and the record evidence on MDA described in the Health Effects section. The record, as summarized herein, shows that MDA exposure is associated with a wide range of health effects. The ability of MDA to induce tumors in animals, suggestive evidence that MDA may induce bladder tumors in humans, and data indicating that MDA interacts with genetic material lead to the conclusion that this chemical is an animal carcinogen and is a possible carcinogen to humans. The NTP study indicates that MDA is carcinogenic in both rats and mice. The study appears to have been conducted in accordance with good laboratory practices and is adequate for use as the basis for quantitative risk assessment. The Oak Ridge National Laboratories data also supports the findings that MDA is a carcinogen in test animals.

In animals, MDA has also been associated with genotoxicity, retinopathy, allergic dermatitis, and hepatotoxicity. In addition, human studies strongly indicate that MDA causes a characteristic acute toxic hepatitis.

The quantitative risk assessment, which is based on animal studies by NTP and on policy indicates that carcinogenicity demonstrated by a chemical in mammalian species is sufficient to conclude that carcinogenicity is possible in humans. The fit of the experimental cancer data to the model used in making the extrapolations was good and the risk assumptions recommended by the Committee are reasonable. Therefore, the resulting assessment appears appropriate.

The preliminary preferred estimate of risk of death from a working life time exposure to MDA at the "highest reported levels ranges from 6–30 per 1,000 depending upon the amount of dermal absorption which is occurring. The Committee concluded that adoption of the Committee's recommended standard would substantially reduce the risks. These findings are consistent with OSHA determinations or preliminary determinations from three rulemakings: Inorganic arsenic (Jan. 14, 1983; 48 FR 1864, 1896) ethylene oxide (April 21, 1983; 48 FR 17284, 17295; and ethylene dibromide (Oct. 7, 1983; 48 FR 45975). Those estimates per 1000 employees for a working life time exposure were 148–425 lung cancer deaths from inorganic arsenic; 63–109 cancer deaths from ethylene oxide and 70–110 angiosarcoma cancer deaths from ethylene dibromide, based on the PEL's which applied prior to the completion of new lower standards.

In evaluating significant risk a framework is provided by an examination of occupational risk rates and legislative intent. For example, in the high risk occupations of fire fighting and mining and quarrying the average risk of death from an occupational injury or an acute occupationally related illness from a lifetime of employment (45 years) is 27.45 and 20.16 per 1,000 employees respectively. Typical lifetime occupational risks of death in occupations of moderate risk are 2.7 per 1,000 for all manufacturing and 1.62 per 1,000 for all service employment. Typical lifetime occupational risks of death in occupations of relatively low risk are 0.48 per 1,000 in electric equipment and 0.07 per 1,000 in retail clothing. These rates are derived from 1979 and 1980 Bureau of Labor Statistics data from employers with 11 or more employees adjusted to 45 years of employment for 46 weeks per year.

There are relatively few data on risk rates for occupational cancer as distinguished from occupational injury and acute illness. The estimated cancer fatality rate from the maximum permissible occupational exposure to ionizing radiation is 17 to 29 per 1,000. (47 years at 5 rems; Committee on the Biological Effects of Ionizing Radiation (BEIR) III predictions.) However, most radiation standards require that exposure limits be reduced to the lowest achievable exposure limit (the ALARA principle). Approximately 95% of radiation workers have exposures less than one-tenth the maximum permitted level. This risk at one-tenth the permitted level is 1.7 to 2.9 per 1,000 exposed employees.

In considering all these findings, the Committee recognized that the estimates of risk posed by occupational exposure to MDA fit within the range of other risks which OSHA has previously concluded are significant. These estimates are higher than risks of fatality in occupations of average risk, and are substantially higher than the examples presented by the Supreme Court.

Current exposures thus were reported as approximately 50 to 70 ppb. The Committee used these levels to estimate risk rather than the existing ACGIH TLV of 100 ppb. In lieu of a mandatory PEL, it appeared to be more appropriate to rely on existing "highest reported" exposure measurements.

Based on the risk estimates, the Committee recommends that OSHA reduce the risks resulting from occupational exposure to MDA to the extent feasible. The Committee has examined the feasibility of establishing various permissible exposure limits and standard provisions. A discussion of the selection of a suitable permissible exposure limit can be found in the Permissible Exposure Limit discussion and the rationale for adopting various standard provisions can be found in the Summary and Explanation section of this preamble. The feasibility of the selected PEL and various standard provisions is also provided in a separate section of this preamble.

In addition, the Committee would like to point out that the estimates of risk set forth for the considered permissible exposure limits only consider the standard's ambient exposure levels, and do not take into account the other protective provisions of the standard such as respirators and medical surveillance. The decrease in risk to be achieved by these additional provisions would be difficult to quantify beyond a determination that they will add to the protection provided by the PEL alone. Compliance with an occupational health standard which provides for medical surveillance, monitoring, recordkeeping, workpractices, use of personal protective equipment, etc., will provide protection beyond that of merely establishing a permissible exposure limit.

VI. Economic and Technological Feasibility

Note.—Tables listed in this section can be found in Exhibit ( ) of docket H040 which is available in the OSHA docket office, see "FOR FURTHER INFORMATION".

A. General Industry

(i). Executive Summary

(a) Background. There is currently no mandatory standard for occupational exposure to MDA. NIOSH has recommended that occupational exposure to MDA be reduced to the extent feasible. ACGIH has adopted a TLV of 100 ppb.

OSHA announced its intention to study and possibly regulate workplace exposures to the chemical, 4,4'Methylenedianiline (MDA), in an Advance Notice of Proposed Rulemaking (ANPR) [48 FR 42836; September 20, 1983], published jointly by the Environmental protection Agency (EPA) and OSHA. The comments and information received in response to the EPA ANPR were submitted to EPA Docket No. OPTS–64000A. All relevant materials from the EPA docket have been included in the OSHA Docket (H–040) for MDA and have been utilized by the Mediated Rulemaking Advisory Committee in making its recommendations.

OSHA and EPA examined the docket information and made simultaneous regulatory determinations. EPA announced in its July 5, 1985, **Federal Register** notice (50 FR 27674) that the MDA rulemaking would be referred to OSHA in accordance with section 9 provisions of the Toxic Substances Control Act (TSCA). OSHA responded to the EPA referral by making an assessment of risk and outlining the regulatory actions the Agency intended to follow. As a result of these preliminary assessments, the Agency selected MDA for rulemaking and decided that mediated rulemaking would be used to assist in the development of a proposed occupational health standard.

OSHA initiated MDA regulatory action by announcing in the **Federal Register**, October 22, 1985 that mediated rulemaking would be used to assist in the development of a proposed rule.

OSHA provided guidance on the role the Mediated Rulemaking Committee would have in developing a proposed rule for occupational exposure to MDA:

> While the Committee's work product will likely serve as the basis for a proposed rule, it will not negate the need for adherence to traditional rulemaking procedures. This negotiated rulemaking procedure is supplemental to the normal section 6(b) rulemaking procedures specified in the OSH Act and is intended to aid OSHA in developing a proposed standard for occupational exposure to MDA.

This document is a product of the Mediated Rulemaking Advisory Committee. The major provisions recommended by the Committee are designed to reduce the risk of occupational cancer and other harmful health effects resulting from occupational exposure to MDA, as follows:

- The recommendations would establish a 10 ppb (0.08 mg/m^3) TWA PEL and require that firms conduct exposure monitoring to determine the MDA levels to which employees are exposed. If the PEL is exceeded, then the firm must develop and implement a compliance program in order to meet these limits. Engineering controls and work practices, when feasible are preferred. However, maintenance personnel are permitted to use respirators, where engineering controls and work practices are infeasible, such as in repairing closed systems.
- The recommendations also have a number of provisions depending upon the physical form of the MDA that are triggered by a 5 ppb (0.04 mg/m^3) TWA action level. These provisions are designed to protect workers who may exhibit early symptoms of the disease associated with MDA exposure.
- The recommendations also have a provision that limits dermal contact with any physical form of MDA and prohibits eye contact with MDA liquids. The Committee recommends that dermal contact be prevented to the extent feasible since it appears to be the primary route of employee exposure.
- In order to reduce the compliance costs associated with the recommendations while still protecting workers, the recommendations contain several exclusions.

Executive Order 12291 (46 FR 13197, February 19, 1981) requires that a regulatory analysis be conducted for any rule having major economic consequences on the national economy, individual industries, geographical regions, or levels of government. The Regulatory Flexibility Act (Pub. L. 96–353, 94 Stat 1164 [5 U.S.C. 601 et seq.]) similarly requires OSHA to consider the impact of the proposed regulation on small entities.

Consistent with these requirements, the Committee has prepared a Preliminary Regulatory Impact and Regulatory Flexibility Analysis for the recommended MDA standard. The analysis describes eleven industries affected by the recommended standard, and the nonregulatory and regulatory alternatives considered.

The Committee examined the following three regulatory alternatives in the analysis: (1) a 20 ppb (0.160 mg/m^3) PEL with a 10 ppb action level, (2) a 10 ppb (0.08 mg/m^3) PEL with a 5 ppb action level, (3) a 1 ppb (0.008 mg/m^3) PEL with a 0.5 ppb action level. The Committee's preliminary findings are as follows:

- It is technologically feasible for industry to comply with a 10 ppb PEL by installing some readily available engineering controls and incorporating some new work practices. Although, it may also be feasible for some industry sectors to achieve 1 ppb as an exposure level that level is not feasible for major sectors of industry.

- Lowering the PEL from the present levels to 10 ppb, the proposed PEL, in conjunction with other provisions of the standard, would result in annualized compliance costs of approximately $8.2 million and save an estimated 14.3 production workers lives per year of exposure. In addition, compliance with the recommended standard will cost an estimated $0.9 million and save an estimated 3.6 maintenance worker's lives per year of exposure.
- The recommended standard is economically feasible for the sectors studied and will not significantly affect either the competitive structure or the long-term profitability of these sectors.
- The recommended standard is economically feasible and will not result in significant or differential impacts on small business establishments covered under the scope of the standard.
- There are no nonregulatory alternatives that adequately protect most workers from the adverse health effects associated with MDA exposure.

A summary of the benefits and costs estimated by the Committee for the recommended PEL of 10 ppb and two other alternative PELs (20 ppb and 1 ppb) are illustrated in Exhibits 4 and 6. The remainder of this discussion summarizes the analyses upon which these findings are based.

(b) Industry and Exposure Profiles. There are eleven principal industry sectors where workers are potentially exposed to MDA. These sectors are: (1) MDA Production for MDI Synthesis/MDA Sale and Import; (2) Reprocessing; (3) Filament Winding; (4) Potting and Encapsulation; (5) Molding/Bonding of Tools and Specialty Small Parts; (6) Wire Coating; (7) Coatings; (8) Intermediate for TGMDA and PACM-20 Production; (9) Polyurethane Curing; (10) Advanced Composite Materials Production; and (11) use of PMR-15 Prepreg Materials. There are also seven other industrial sectors where MDA was once used and may still be rarely found. These minor sectors are: (1) Coatings (Polybismalimides) of Printed Circuit Boards and Fabrication of Airplane Parts; (2) Dyes and Pigments; (3) Quiana Yarn; (4) Intermediate for Pharmaceuticals, Herbicides, etc.; (5) Rubber Processing; (6) Anti-Oxidants; and (7) Ketamine Production.

MDA is made primarily to serve as an intermediate in the production of methylenediphenylisocyanate (MDI) and MDI is used in a wide variety of products. However, one to two percent of all MDA produced is sold for uses such as epoxy or polyurethane curing, or production of polyamides. In addition, some MDA is imported and used to produce a crude MDI known as PAPI or used for other non-MDI uses such as TDGMA or PMR-15 manufacture.

There are six firms which produce MDA for MDI production, MDA for Sale, or which import MDA. MDA is manufactured by 6 companies at 7 locations in four states. Dow Chemical Co. (LaPorte, Texas); BASF (Geismar, La); E.I. Dupont (Belle, WV); Mobay Chemical (New Martinsville, WV and Baytown, TX); Rubicon Chemical (Geismar, La); Uniroyal Chemicals division of Avery (Naugtuck, Ct). Three of these companies, Mobay, Rubicon, and Dow account for over 90% of the MDA production. It is estimated that approximately 600 million pounds of MDA are produced for MDI conversion, 4,474,000 pounds are produced domestically for sale, and an additional 990,000 pounds are imported. In addition, it is estimated that the percentage of MDA in the product made domestically ranges from 40–70% while the percentage in the imported product is approximately 98%.

International competition in the production and sale of industrial organic chemicals increased between 1979 and 1982 and is expected to grow in the long term. The quantity of MDA imported (1985 reporting) is estimated to be approximately 990,000 pounds and is expected to increase.[1]

The primary factors affecting the demand for MDA are the (1) Use of MDI, (2) Continued suitability of MDA for certain non-epoxy uses, (3) Continued suitability of MDA for certain epoxy uses, and (4) Availability of substitutes.

Uses of MDI are far reaching and include areas of construction, refrigeration, transportation, tank and pipe insulation, packaging, casting systems for solid products, and systems for microcellular products. Consumer products include polyurethane foams (rigid, and flexible), elastomers, coatings, thermoplastic resins, foundry core binders, adhesives and sealants, and spandex fibers. Thus, because MDA is the reactant chemical in the production of MDI, the significance of and the need for MDA depends upon the need to produce MDI. However, since there are so many products containing MDI and the extent of MDI use is increasing, it can be assumed that MDA use will also continue to increase. In addition, the non-MDI uses of MDA (2% of total MDA consumption) are also expected to increase as product demand in the areas of nuclear energy, weapons manufacture, and space exploration increases.

(c) Benefit Analysis. The reduction in the occurrence of occupational illnesses that would result if the Committee's recommended MDA standard is promulgated represents the major benefit of the recommended standard. Some aspects of these benefits can be quantified, such as the reduced risk of cancer due to direct exposure to MDA. The Committee's analysis of the number of cancer cases that would be prevented because of the proposed MDA regulation is based on an OSHA model for quantitative assessment of the risk of cancer resulting from occupational exposure to MDA (See Chapter III). In addition, the Committee believes that the use of these quantitative techniques underestimates the true benefits of the recommended regulation, because the only benefits quantified in the analysis are those resulting from a reduced incidence of cancer (**Note.**—It is true that the model ignores non-cancer effects, but the risk was done with "worst case" assumptions throughout, making estimates, possibly, overestimates) and do not include an estimate of the reduction in the incidence of other adverse health impacts potentially associated with MDA exposure such as liver disease. Because of data limitations, the Committee could not quantify these additional benefits, but expects that they will be substantial.

Based on the methodology detailed in Chapter III, the Committee has estimated the excess cancer cases that are expected to occur among MDA-exposed workers (as compared to those expected in a population with no MDA exposure) in the eleven principal industry sectors described above. Estimates of risk are based on both airborne and dermal doses of MDA.

Based on current MDA exposure levels, the Committee estimates that by lowering the PEL to 20 ppb and implementing other components of the standard, the number of excess deaths would be reduced by 13.8 for each year of exposure; by lowering the PEL to 10 ppb, the number of excess deaths would be reduced by 14.3 for each year of exposure; and by lowering the PEL to 1 ppb, the number of excess deaths would be reduced by 14.9 for each year of exposure. These estimates apply to production workers only; an additional

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[1] The Bureau of Industrial Economics predicts that the United States will become less important as a supplier for large-volume commodity organic chemicals in world markets in the future. Energy costs will play an increasingly important role in the foreign trade of organic chemicals.

3.6 excess cancer deaths would be avoided each year among maintenance workers as a result of the standard. The analysis indicates that most of the potential risk results from dermal exposure. Most of the benefits (cancer averted), therefore, are apparent in PEL 1 (20 ppb), with the imposition of requirements that reduce dermal exposure. Further reductions in the PELs (to 10 and/or 1 ppb) result in only small increases in benefits.

In addition to the lives saved as a result of reduced MDA exposure levels, the Committee expects the medical surveillance provisions to reduce the number of excess deaths further. Workers exposed to MDA often exhibit early signs of liver disease that can be detected by a proper medical examination. Better control of the MDA exposures of these workers would, at least in some cases, provide an opportunity to reverse the abnormalities prior to the development of potentially fatal disease.

(d) Technological Feasibility. The Committee has determined that the recommended standard is technologically feasible. The methods that can be used to reduce employee exposure to MDA include conventional technologies such as general and local exhaust ventilation, pneumatic feed systems, and glove boxes. Such technologies are commonly known and currently used in the affected industries. In addition, provisions of the recommended standard that are not related to the PEL, such as medical surveillance and training, are judged to be feasible.

The Committee's assessment of technological feasibility is based on information collected by two consulting firms ICF, Inc. and Heiden Associates, on current industry exposure levels, on information on the availability of the controls needed to reduce exposures to the alternative levels, and on other evidence compiled by the Committee.

(e) Cost of Compliance. The Committee made estimates of the compliance costs that would be incurred by employers in the eleven principal industry sectors which handle MDA and would be primarily affected by the recommended standard. Because there are industry-specific differences in exposure characteristics and equipment usage, cost estimates for each sector were developed separately.

A baseline of current industry practice was identified for each sector. This baseline was derived from information on current production methods, exposure levels, and hazard control techniques obtained from information supplied to the Committee. The costs of the controls which would be needed to achieve each successively lower PEL were then estimated based on the assumption that new controls could be added to those controls already in place.

It should be noted that the lower the target PELs, the higher the uncertainty associated with estimates of the effectiveness of control technology and housekeeping practices and their related costs. The Committee is confident that a 10 ppb PEL can generally be reached and maintained on an 8-hour TWA basis but is unsure that all industry sectors could generally achieve a 1 ppb PEL.

The Committee has estimated the following total annualized compliance costs (for production workers) associated with the three alternatives: $7.6 million for the 20 ppb alternative, $8.2 million for the 10 ppb alternative, and $10.2 million for the 1 ppb alternative. A comparison of the three alternatives shows that the estimated incremental costs of lowering the proposed PEL from 20 ppb to 10 ppb are approximately $0.6 million per year. The estimated increased cost of further attempting to lower the PEL from 10 ppb to 1 ppb is approximately $2.0 million per year. The major component of the estimated costs for production workers are the costs of hygiene facilities and practices, which constitute from 48% to 56% of the total estimated costs for the three alternative PEL's. The second major element of cost is for protective clothing and equipment, which ranges from 33% to 24% of the total for the three PEL's. Housekeeping costs constitute approximately 9–13% of the total estimated costs. For all three alternative PELs, the estimated costs of engineering controls constitute only a small percentage (2–6%) of the total estimated annualized costs of compliance for production workers.

(f) Economic Feasibility Analysis. The Committee acquired a substantial amount of data regarding compliance technologies in the course of its feasibility analyses. While this material was extremely useful for the Agency's technological feasibility and compliance cost analyses, it was not sufficient to support detailed, rigorous economic and regulatory flexibility analysis. None of the submissions, for example, presented data on the profitability of specific product lines, and detailed financial and economic data were available for only a few firms which produce or use MDA. The Committee therefore relied heavily on the material gathered by both Heiden Associates and ICF to perform a preliminary analysis of the economic impact of the recommended proposal at the industry sector level, under a set of simplified assumptions about the economic and financial conditions of the MDA industries.

A substantial amount of information is needed to analyze the economic impacts described above. Not all of it could be developed given the scope and resources of the Committee's investigation. However, in previous work, ICF has investigated the costs of substitute chemicals for MDA in many of its broadly defined uses. In addition, PEI gathered information on substitute costs from individual firms during their site visits. While conducting these visits, PEI also collected some information on current costs of the production activities that use MDA. Finally, ICF has collected and developed some general economic information on the affected industries and the markets of their products and a small number of firms in the MDA industry. Using these data, the Committee has been able to examine the economic effects of the regulations in terms of potential price increases, employment and output effects, and impacts on firms' profitability.

The overall conclusions reached in the Committee's economic impact assessment are: (1) Most, if not all, of the affected industries ought to be able to pass the regulation's costs through to product purchasers (because of market and other considerations described below), (2) to the extent that output good prices rise in the process of passing these costs through to product purchasers, these price increases are not likely to be very large relative to the pre-regulation prices of the products, and (3) to the extent that prices of products do not rise (so that pass-through of these regulatory costs to product purchasers does not occur), the regulatory costs are not large relative to the other production costs and the net incomes of the companies examined. Consequently, the Committee has concluded that the proposed regulations will not pose a substantial burden to the affected industries, their employees, or consumers of their products.

Hence, the Committee's preliminary conclusion is that it is economically feasible for the eleven principal industry sectors to comply with the provisions of the recommended MDA standard and that none of the sectors studied by the Committee would experience significant economic impacts.

(g) Regulator Flexibility Analysis. Pursuant to the Regulatory Flexibility Act of 1980 (Pub. L. 96–353, 94 Stat. 1164 [5 U.S.C. 601 et seq. 10, the Committee has given special consideration to the mitigation of the economic impacts of the recommended standard on small entities. The Committee does not

anticipate that the recommended standard would adversely affect small entities.

In developing a recommended standard for occupational exposure to MDA, the Committee carefully considered size factors such as number of employees, total assets, and gross revenues to ensure that the proposed standard would minimize the impact on small firms while continuing to protect workers. Furthermore, the Committee determined in the economic feasibility analysis that most, if not all of the affected industries would be able to pass the regulatory costs through to product purchasers reasonably rapidly. Thus, most of the affected firms probably will not have to bear all of the compliance costs for these regulations.

Finally, the Committee examined the financial conditions of a sample of firms affected by the regulations and determined that even if these firms were to bear the compliance costs of the regulations, these would not impose substantial burdens for these firms. Therefore, the Committee's conclusion is that the proposed regulation will not significantly affect small entities.

(h) Assessment of Nonregulatory Alternatives. The Committee believes that there are no nonregulatory alternatives that adequately protect most workers from the adverse health effects associated with MDA exposure. The tort liability and Workers' Compensation systems do not provide adequate worker protection due to their unpredicability and inconsistency from state to state. Other government regulations do not provide adequate worker protection due to their limited scope. OSHA does not have a current workplace standard for occupational exposure to MDA; thus no regulatory protection is currently being provided (Note: many employers offer voluntary protection e.g. personal protective equipment, showers, change rooms, etc.).

(i) Cost-Effectiveness of Regulatory Alternatives. The available scientific evidence demonstrates that MDA exposures can pose a hazard in the workplace. The Committee believes that this hazard can be significantly reduced through the implementation of any of the three alternative PELs considered in this report (i.e., 20 ppb, 10 ppb, 1 ppb). The Committee believes that this hazard can be significantly reduced through the implementation of the 10 ppb PEL. The Committee further believes that the cost-effectiveness of the alternative PELs is evaluated. As indicated, this shows that, although the 10 ppb PEL is not the lowest average cost-per-death-avoided the marginal cost of saving additional lives relative to the 20 ppb PEL is clearly small enough to be social welfare enhancing. The marginal cost of saving lives by moving to the 1 ppb PEL however is far more expensive and technologically infeasible for some industries. Consequently, the Committee has identified the 10 ppb PEL as the most cost effective PEL for controlling exposures to MDA.

(j) Conclusion. It is the conclusion of this analysis that the Committee's recommended standard, including a 10 ppb PEL and other requirements, will substantially reduce the risk to worker health (see Chapter III), that it is feasible (see Chapters IV and VI), and that it is cost-effective.

(ii) Industry and Exposure Profile

(a) Introduction. This chapter provides an overview of the major industry sectors that would be affected by adopting a standard for occupational exposure to MDA, and it includes descriptions of chemical use; descriptions of processes; descriptions of controls or programs already implemented; descriptions of additional controls needed to achieve certain PEL's; estimates of exposure levels; descriptions of the worker populations exposed; and in some but not all sectors, general production and other economic data for MDA. The data used in this report were compiled by the MDA Mediated Rulemaking Advisory Committee and reflect submissions by EPA, OSHA, participant industry groups, participant labor groups, and other mediation participants.

Estimates of current levels of worker exposures to MDA and other data are summarized for the eleven principal identified industry sectors in Table II-1. The quality and quantity of the available exposure data was varied greatly, and for some sectors it was scant. No exposure profiles are presented for workers employed by firms that are either covered by the proposed exclusions or that are under the jurisdiction of another regulatory agency. The estimates of number of workers exposed and the levels to which these workers are exposed are based on "reasonable worst case" assumptions. For example, the data for the number of firms or the number of exposed workers per firm was usually available in broad ranges. In the absence of specific values the Committee typically selected the higher number. The Committee adopted the "worst case" approach, which although conservative, is more reasonable when there is uncertainty in selecting a representative figure. Exhibit 2-1 is a summary of the estimates used for a number of key parameters in each industry sector. The remainder of this section describes the rationale for each of these estimates. Exhibit 2-2 summarizes, for each industry sector, the Committee's estimates of the number of workers exposed to different levels of MDA. These estimates are the basis for "baseline" (non-regulated) conditions in the Analysis of Risks and Benefits (Chapter III).

The Committee believes that the exposure profiles and other information presented in this chapter are generally representative of the conditions in the industries analyzed. The data used to estimate the populations at risk for each of these industry sectors were also gathered through the efforts of the Committee. Whenever possible, the data were corroborated by using multiple sources and the Committee selected the data which it believed to be most reflective of the current industrial conditions. Whenever the available data were weak or insufficient, the Committee assumed reasonable worst case estimates. Because the Committee is comprised of an equal number of industry and labor representatives and because many of the Committee members possessed "first hand knowledge" of specific industrial sectors, the Committee believes that its compilation of data can be reasonably relied upon. The source of the data and the rationale for each estimate are described in the sections which follow.

(b) Industry Sectors—(1) *MDA Production for MDI Synthesis/MDA Sale and Import*—(a) *Use.* MDA is made primarily to serve as an intermediate in the production of methylene diphenyl diisocyanate (MDI). MDI uses are: polyurethane foams (rigid, and flexible), elastomers, coatings, thermoplastic resins, foundry core binders, adhesives and sealants, and spandex fibers. However, one to two percent of all MDA produced is sold for uses such as epoxy or polyurethane curing, or production of polyamides. In addition, some MDA is imported and used to produce a crude MDI known as PAPI or used for other non-MDI uses such as TDGMA or PMR-15 manufacture.

(b) *Process Description, Current Control Technology, and Exposure Areas.* MDA is produced by the acid-catalyzed reaction of aniline and formaldehyde in a closed reaction vessel usually made of stainless steel or other corrosion resistant materials at slightly elevated temperatures. The production process can be either continuous or batch in nature.

The input materials are aniline, formaldehyde, and hydrochloric acid.

The aniline/formaldehyde ratio ranges from 2.5 to 10. The only product is the acidified polymeric MDA; there are no by-products. A large portion of the MDA consists of higher homologues or polyamines.

Varying the ratio of the feed stocks and catalyst, the reaction time and the reaction temperature determines whether the product obtained consists mainly of the "pure" MDA, or polymeric materials with higher amine functionalities.

In the chemical industry there are basically three grades of MDA. There is pure MDA which contains 99% or more MDA and "polymeric" MDA which generally contains 40–60 percent of the monomer MDA. An intermediate grade of MDA is used to make MDI for RIM (reaction injection molding). Polymeric MDA is used almost exclusively in the production of MDI, although small amounts are also used in non-MDI applications. A small amount of pure MDA is used to make pure MDI for specialty applications.

In addition, crude MDA can be purified by various techniques to yield products which contain varying amounts of MDA and higher polymeric species.

MDI is produced from MDA by reacting it with phosgene in a 2:1 molar ratio. The reaction with phosgene goes essentially to completion with almost quantitative conversion of polymeric MDA to polymeric MDI.

MDA production and conversion to MDI are both enclosed processes, without any purge or offgas streams. MDA exposures during these operations occur as a result of routine fugitive emissions, emissions resulting from malfunctions of the process piping or vessels, and during quality control sampling. Worker exposure may occur as a result of these emissions.

Worker exposure in this industry may also occur during the product transfer operations which take place when manufactured or imported MDA is packaged for resale. MDA is packaged and sold as a viscous liquid or lumps in the crude form or as flakes or granules in the purified form.

Liquid MDA is sold in bulk (tank cars or semi trailers) or in 55-gallon drums. The lump form of crude MDA is sold in bags. Purified MDA is available in bags or kegs. Characteristically, the transfer operations are controlled with qeneral and/or local exhaust ventilation systems, although several of the exposure levels reported in the Heiden survey (A survey conducted by a consulting firm, Heiden Associates, which was commissioned by the Chemical Manufacturer's Association and made available to the Committee) strongly suggest that current controls may often be minimal.

Inhalation of dust or skin contact from handling of containers can also represent potential exposure risks to the worker. Drums and bags must be moved, stored, and placed on trucks for shipment or transported to other places in the plant. Damage to the container in any of these operations can expose workers to MDA.

(c) *Populations Exposed and Levels of Exposure.* Information gathered by the Committee, primarily through the Heiden survey, suggests that there are approximately 525 potentially exposed workers at 7 facilities operated by 6 firms (75 exposed workers per facility). These facilities carry out both production of MDA for internal MDI production, and production and import for sale. Furthermore, in this sector MDA is typically produced 341 days per year; but in terms of worker exposure estimates, the Committee assumed that the maximum number of days of exposure per worker would be 250 days per year. The total production population for the three firms reporting in the Heiden survey was 321 production workers who work 12 hour shifts. Each firm ran 2 shifts. The average total number of workers in MDA/MDI production areas were 89 per shift (178 for 2 shifts) but only 36 per shift are potentially exposed to MDA (72 for 2 shifts).

Only one of the reporting firms in the Heiden survey supplied information on employee duration and extent of exposure. In this facility, the duration of exposure ranged from ½–6 hours for production area operators, with most workers exposed for 6 hours. Average 8-hour TWA exposures for these workers ranged from 0.4–1.0 ppb with most samples reported as non-detectable (the analytical sensitivity is assumed to be less than 0.4 ppb since that is a reported value). Engineers were exposed ½–2 hours per shift to MDA, but their levels of exposure were not provided. Quality control workers were reportedly exposed 6 hours per 12-hour shift, with an approximate TWA exposure of 0.4 ppb.

Most of the firms reporting in the Heiden survey stated that sampling data were not available or that the results were below the limit of detection. Depending upon the sampling technique used, the limits of detection could have been in excess of 10 ppb (One firm reported limit of detection of 10 ppb). The Chemical Manufacturers' Association (CMA) reported (in EPA communications) that exposures for this particular industry sector ranged from less than or equal to 0.01 mg/m^3 (1 ppb) to 0.33 mg/m^3 (41 ppb)mg/m^3. Monitoring results reported from one MDA conversion area measured exposure levels of 0.01 mg/m^3 (1 ppb). ICF used these reported values as worst case exposure scenarios in their analysis.

Exposure information on the repackaging of MDA for sale was available from the Olin Co. Exposures of 0.005 mg/m^3 (0.6 ppb) were reported for the production operator (individual who is responsible for putting MDA in the appropriate form or removing isomers), 0.074 mg/m^3 (9.2 ppb) for the flaking/packaging operator, and 0.032 mg/m^3 (3.9 ppb) for the maintenance operators. However, information furnished in the Heiden survey reported results of area samples (20-minute samples) near drumming/loading areas which were as high as 5.0 mg/m^3 (590 ppb). However, results from personal samples (8-hr TWA samples) in the same areas of the same plants did not show any employee exposure (the results of the sensitivity of analytical methodology was not reported). Other short-term area samples in the Heiden survey indicated that during product transfer operations contaminant levels ranged from 7–53 mg/m^3 (864–6500 ppb. 1 hour samples); however, there was no indication from the data how or whether these levels correspond to personal exposures.

The information provided by the Heiden report for this sector was drawn from only one firm, and the very high levels reported for solid product transfer operations do not appear to reflect the average employee exposures in these operations. ICF's estimates of baseline representative exposures, on the other hand, were developed from multiple sources of data (EPA, NIOSH, and site visits); thus it seems reasonable to assume that ICF's estimates are more representative of the exposures generally found in this industrial sector especially since ICF examined all the available data and developed a worst case scenario. Thus, for the purpose of determining feasibility and estimating costs of compliance the exposure levels estimated in the ICF report were used. On the other hand, the Committee believes that the Heiden data contains more reliable estimates of the number of employees exposed to MDA per plant since all the firms reporting provided information, whereas the ICF estimates for number of workers exposed, unlike the exposure data are derived from assumptions and the data from only one reporting firm.

(d) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* Although the Committee chose to use a hypothetical worst-case exposure level of 41 ppb in the MDA production areas, the available data indicate that some firms are already in compliance with an exposure level of 10 ppb.

ICF reported that improving maintenance on the existing process enclosure seals and piping can maintain worker exposure levels below 1 ppb, based on the current, experience of one plant which already maintains levels below 0.6 ppb with existing enclosures and maintenance. The only two MDA for MDI production firms in the Heiden survey that estimated their capability of achieving different exposure levels reported that they could reduce levels below 10 ppb, but only one of the two reported being able to reduce the levels below 1 ppb, and none estimated they could go below 0.1 ppb. Paradoxically, however, all the exposure data actually reported in the Heiden survey for the MDI production areas was equal to or less than 1 ppb. consistent with the ICF estimates of current achievable exposures in those areas. ICF further estimated that even levels below 0.1 ppb can be maintained by the addition of local exhaust ventilation hoods each process vessel together with sustained seal and piping maintenance; but there are no available data to support that presumption.

For this industry sector, the operations involving packaging of MDA for sale result in the greatest danger of potential worker exposure when employees fill containers (drums, tanks, bags) with liquid or solid MDA. The equivalent handling of imported MDA poses similar hazards. Typically, a drum loading operation is conducted within a three-sided enclosure or room with general exhaust ventilation, and a semi-circular local exhaust hood for the actual drum filling. The hood is fitted over the drum during filling, and displaced air and dust are drawn off through a second hose connected to the drum lid. The drum is then removed to a weighing area where additional MDA is added if required. The weighing area does not typically have a hood or other local exhaust ventilation.

The data available for exposure levels during such product transfer operations are extremely variable, suggesting that the existence and effectiveness of industrial hygiene controls are also very variable. As discussed above, ICF reports exposure levels of 4–9 ppb for packaging machine operators, while the Heiden survey reports values ranging from zero to as high as 635,000 ppb. The higher values from the Heiden data, however, are reported for short-term (less than one hour) area samples, and it is not at all clear what relationship they have to the actual personal exposures of workers. It is reasonable to assume that the higher levels reflect very uncontrolled operations, since standard local exhaust ventilation designs are available to control dust and vapor concentrations during packaging operations to well within 1 mg/m^3, which would be equivalent to a worst case scenario of 125 ppb of MDA.

ICF has estimated that exposure levels of 6 ppb, 3 ppb, and 1 ppb can be achieved in product transfer and packaging operations by enclosure of the MDA flaking cylinders, and the use of a semi-circular exhaust hood for drum filling or an equivalent system for product transfer to tanks. As in the case of the production areas, there is scant data available to support this engineering estimate.

Exposures among quality control workers (laboratory technicians and scientists) are also reported in this industry sector, in the range of 0.4–1.2 ppb (Heiden survey). Compliance levels of 20, 10, and 1 ppb can certainly be achieved by performing all laboratory work under standard hoods, in addition to the controls which would be implemented in production areas.

Exposures in this industry sector are also reported for maintenance workers. Maintenance exposures are inherently variable, and it is reasonable to expect that maintenance workers will be required to wear appropriate respiratory protective equipment under any scenario for an MDA standard.

(e) *Production, Consumption, Capacity*. MDA is manufactured by 6 companies at 7 locations in four states. Dow Chemical Co. (LaPorte); BASF (Geismar, LA); E.I. Dupont (Belle, WV); Mobay Chemical (New Martinsville, WV and Baytown, TX); Rubicon Chemical (Geismar, LA); Uniroyal (Naugatuck, CT). Four of these companies, Mobay I and II, Rubicon, and Dow, account for over 90% of the MDA production. It is estimated that approximately 600 million pounds of MDA are produced for MDI conversion, 4,474,000 pounds are produced domestically for sale, and an additional 990,000 pounds are imported. In addition, it is estimated that the percent of MDA in the material produced domestically ranges from 40–70% while in the imported product it is approximately 98%.

(f) *Competition*. International competition in the production and sale of industrial organic chemicals has increased between 1979 and 1982 and is expected to grow in the long term. The quantity of MDA imported (1985 reporting) is estimated to be approximately 990,000 pounds and is expected to increase. The Bureau of Industrial Economics predicts that the United States will become less important as a supplier for large-volume commodity organic chemicals in world markets in the future. Energy costs will play an increasingly important role in the foreign trade of organic chemicals.

(g) *Factors Affecting Demand and Substitution for MDA*. The primary factors affecting the demand for MDA are the (1) Use of MDI, (2) Continued suitability of MDA for certain non-epoxy uses, (3) Continued suitability of MDA for certain epoxy uses, and (4) Availability of substitutes and their price.

Because MDA is the reactant chemical in the production of MDI the significance and the need for MDA depends upon the need to produce MDI. However, since there are so many products containing MDI and the extent of MDI use is increasing, it can be assumed that MDA use will also continue to increase.

Non-epoxy uses of MDA can be found in wire coating, polyurethane curing, and PMR–15 production. Epoxy uses include potting and encapsulation, coatings, filament winding, wet lay-up laminates, small casters, toolers, and TGMDA production. Demand for each of these sectors is discussed in specific sections.

(h) *Exposure Profile*. This industrial sector has an estimated total of 525 workers potentially exposed to MDA using a worst-case estimate of 75 exposed workers per facility. All must be assumed to be at risk of dermal exposure. With respect to airborne exposures to dust or vapor, a reasonable worst-case scenario suggests levels of approximately 40 ppb in MDA production areas although much of the reported data is in the range of 1 ppb. Approximately 25% of the exposed workforce works in these areas. A worst-case scenario for the MDA conversion areas suggests current exposure levels near 1 ppb. Product transfer operations, which involve approximately 50% of the exposed workers in this sector, entail very variable worker exposures, likely in the range of 20–40 ppb. Laboratory exposures affect 25% of the workforce and they hover near 1 ppb.

(2) *Reprocessing of MDA*. (a) *Use*. Reprocessing operations can include the conversion of MDA into a different physical form, repackaging into different containers, or mixing with other substances to form new products. In

reprocessing, the MDA remains in the product as MDA and is not reacted or changed chemically by any of the processing operations. The principal exposures result from dermal or airborne contact with the MDA as it is removed from containers, added to mixing devices, or packaged. The reprocessed MDA has two general applications: epoxy and non-epoxy uses. Non-epoxy uses include wire coating, dyes and pigments, polyurethane curing, and PMR–15. Epoxy uses include potting/encapsulation, coatings, filament winding, wet lay-up laminates, small casters, toolers, and TGMDA production.

Several epoxy products are produced using MDA. For example, one such product is used to protect legs of offshore platforms and pier pilings from abrasion, another is used for the protection of cement from acids (i.e., floors in battery plants, nickel plating operations, etc.), and a third is used to coat both the inside and outside of containment vessels at nuclear power plants. Other products using MDA include epoxy-based chemical tank linings, fiberglass-reinforced thermal setting resin pipe and pipe fittings, and elastomeric urethanes.

(b) *Process Description, Current Control Technology, and Exposure Areas.* MDA reprocessing is done through a variety of methods, including dry-mixing or melting MDA and transfering it by various methods to mixing tanks or blending vessels. For example, reprocessors may be automated whereby the products are produced by using mechanically hoisting drums of MDA (pelletized or flake), dumping them into a hopper, and feeding these dry forms into a pulverizer. Prior to dumping, the drums are opened and the tops are connected to the feed hopper through a sealed connection with the shipping drum. The MDA is then gravity fed under negative pressure to the pulverizer and mixer which are both closed systems. After pulverizing, the MDA is screened to 30 to 60 mesh and mixed with other ingredients in a twin shell blender. The blended ingredients are packaged directly from the bortom of the blender. The shipping container typically has a screw cap and enough space left unfilled to allow downstream users to pour the liquid epoxy into the MDA container and use the closed MDA container to mix the two parts.

Another production method involves manually handling and blending pure MDA in an open top tank. The MDA is weighed and then dumped into an agitated tank containing liquids. A lid is placed on the agitate tank for mixing. The product is tapped out the bottom of the tank for packaging. The Heiden survey reported that 84% of the reformulated MDA product among their respondents (13 plants) was in liquid form.

These operations are typical reprocessing operations, involving the manual or mechanical opening of containers, dumping of MDA, grinding or pulverizing of MDA, mixing of dry or melted MDA with other components, and repackaging of the final product. One of the respondents in the Heiden survey reported that its facility had a pre pregging operation downstream of its reprocessing.

(c) *Populations Exposed and Levels of Exposure.* ICF estimated that an average reprocessing facility employed approximately 48–290 production employees (an average of 206) with 6–14 (an average of 9) of these workers being exposed to MDA. ICF further estimated that approximately 117 workers are potentially exposed to MDA in this sector (based on an estimated total of 13 facilities). Information furnished by the Heiden survey also indicates that approximately 9 employees per shift are exposed to MDA, however, most firms supplying data ran at least two eight hour shifts, thus approximately 18 workers per facility would be potentially exposed to MDA. Also, ICF estimated approximately 13 reprocessors whereas Heiden reported 42.

The discrepancy in the two figures probably resulted from different methods of data collection. The ICF numbers more than likely represent the number of firms which are industrially classified as reprocessors, whereas the Heiden estimates apparently include both firms industrially classified as reprocessors and facilities which perform a myriad of operations, one of which is MDA reprocessing. While it may be inappropriate to classify these as strictly reprocessing firms, it is certainly appropriate to count these work operations when determining the number of employees exposed while reprocessing. Thus, the Committee concluded that an estimate of approximately 756 potentially exposed workers (42 plants x 18 exposed per plant (6 per shift, 3/8 hr shifts)) in reprocessing operations is reasonable.

ICF also estimated that exposure levels in this industry are currently measured to 0.03 (3.7 ppb) mg/m^3 for batch makers using granular MDA, 0.66 (81 ppb) mg/m^3 for the batch makers using flaked MDA, and 0.01 mg/m^3 (1 ppb) for the drum filling operation at all facilities. All the facilities surveyed by ICF were handling MDA and MDA products in dry form.

Exposure information was reported in one case study of MDA exposure resulting in industrial hepatitis. It is likely that the incident is not representative of normal conditions. Results from air sampling taken during the dumping of MDA ranged from 0.2 (24 ppb) to 3.11 (370 ppb) mg/m^3; during the mixing was 0.48 (59 ppb) mg/m^3; and during packaging, ranged from 0.53 (65 ppb) to 0.68 (83 ppb) mg/m^3. Airborne exposures during the bagging and charging process were at least partly due to faulty controls. The main route of exposure to the affected persons was evidently dermal. Although the workers wore coveralls (changed twice a day); a wide brim hat, impervious gloves and an airline respirator, coveralls were not impervious to MDA. The protection of the coveralls were defeated by making cuts in the material resulting in stained armpits.

The data collected by the Heiden survey is generally consistent with the ICF estimates and is based on responses from five plants. These plants had average exposure levels in the blending/reacting areas which ranged from zero to 240 ppb. The higher values, however, were reported only for short-term (½–1 hr) measurements. Long-term samples, which are more reflective of TWA exposure, ranged from 0–25 ppb. In the packaging areas, Heiden found exposure levels from zero to 4 ppb, with most of the reported samples reflecting long-term averages.

The fact that the Heiden survey found relatively lower levels of exposure in the packaging areas than ICF estimated strongly suggests that the handling of liquid MDA products results in smaller employee exposures to airborne MDA, since most of the plants in the Heiden survey handled liquid MDA, while ICF surveyed plants handling solids. In a similar vein, ICF reported that the handling of dry MDA flakes resulted in higher exposures than the handling of dry MDA pellets.

The Heiden survey also reported exposure levels for laboratory personnel below 1 ppb, and one 8-hour measurement for a maintenance worker of 250 ppb.

(d) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* Typically these operations involve the opening of containers, dumping of dry or melted MDA, grinding or pulverizing of MDA, mixing of MDA with other ingredients, and repackaging of dry or liquid final products containing MDA.

As in other situations, the operations involving filling the containers with liquid or solid MDA or MDA products have the greatest potential for worker exposure.

Of the three representative facilities examined by ICF, one had exposure levels below 1 ppb. ICF reported that a second facility could achieve a PEL of 3 ppb by converting to the use of granular MDA rather than flake MDA, but the widespread feasibility of this approach was sharply disputed by the industry representative on the Committee. One of the facilities surveyed by ICF already meets a 1 ppb PEL by use of a pneumatic feed system (a vacuum lid) to feed the granular MDA into the reaction vessel. According to ICF, a similar engineering control can be applied to achieve a level of 1 ppb at other dry-product handling operations. However, these facilities would require additional engineering controls to achieve a PEL of 0.1 ppb. To achieve this level, according to ICF, two of the facilities would need a glove box in addition to pneumatic feed systems for granular MDA. All three would need semicircular hooding for container filling operations. These engineering projections were assumptions not supported by evidence.

The Heiden Survey provided very variable estimates of the controls which would be needed to achieve compliance with 0.1, 1, and 10 ppb. To achieve compliance with 0.1 ppb some respondents estimated that a totally new process line would need to be developed, while others stated that complete enclosure of the dumping stations would be necessary. One respondent stated that by using a system of exhaust fans on the reaction kettles, the entire facility would be able to meet 0.1 ppb exposure limits. Several reported that to achieve 1 ppb, pneumatic feeding of MDA and totally enclosing the premix and treatment systems would be necessary. Most of the Heiden respondents indicated that they were already in compliance with a level of 10 ppb by use of some combination of general and local exhaust ventilation systems. One reprocessor had made a process change and, rather than mixing dry MDA raw material, his firm buys a liquid mixture from the manufacturer and repackages it. This results in a reduction in worker exposure.

ICF and Heiden came to different conclusions about the technology required to achieve different levels of control. Generally, the responses in the Heiden survey indicated that it was more difficult for the various firms to achieve a 1 ppb PEL than ICF estimated. The Committee concluded that levels of 20 ppb are already being achieved, and that to achieve 10 ppb it would be necessary to install pneumatic feed systems for solid MDA transfer and semi-circular hoods or the equivalent for packaging operations. The former type of control would not be necessary in approximately 40% of the facilities (based on the Heiden survey data) which are currently using liquid MDA as the raw material rather than solid MDA forms. To achieve a PEL of 1 ppb, the Committee concluded that it would be necessary to use glove boxes to control exposures from packaging operations. The Committee also agreed that substitution of flake by granular MDA would not always be a feasible control.

(e) *Production, Consumption, Capacity*. Reprocessors, as indicated by their classification, take MDA and reprocess it into other forms or products containing unreacted MDA. The Heiden Survey reports estimates that a typical facility may purchase between 3,195 to 1,000,000 pounds of MDA annually and produce 2,210 to 4,500,000 pounds of a product like epoxy hardener annually for resale. The percent of MDA in the mixtures or solids purchased ranges from 5 to 98% with 84% of the reprocessed materials being sold as liquid mixtures, 8% sold as pellets or solids, and 8% sold as flakes or powder.

Heiden further estimated that there are approximately 42 facilities where MDA is reprocessed. ICF estimates that there are only 13 actual firms but as discussed in the earlier section, the Committee considers the Heiden estimates to be more accurate.

(f) *Competition*. Approximately 2% of all the MDA produced domestically is sold for reprocessing and ultimately for the production of MDA containing products. Importation of MDA is reported to be approximately 990,000 pounds annually, most of which is reprocessed. With the increased use of MDA in the nuclear energy field, weapons development, and other areas, one can reasonably expect an increase in the demand for MDA containing products, and hence an increase in production and/or importation.

(g) *Exposure Profile*. There are approximately 756 employees potentially exposed to MDA in an estimated 42 facilities in the reprocessing sector. There are no exposure data for workers in the receiving/warehouse and shipping areas, who constitute approximately 15% and 24% respectively of the total exposed population. It is likely, however, that the exposures to these workers are low, since they would result only from handling sealed containers which would only ocassionally be damaged or contaminated. For purposes of analysis, these workers were assumed to be currently exposed to 1 ppb or less. The workers in the blending and reaction areas can be estimated to be exposed to 20 ppb or less, as a worst case estimate, and they constitute approximately 13% of the exposed workforce. Workers in the packaging areas, who constitute approximately 20% of the exposed workforce, are exposed to levels of 10 ppb or less.

(3) *Epoxy uses of MDA*— (a) *General*— (1) *Use*. MDA is the major curing agent for epoxy resins. Epoxies are monomers or pre-polymers that react with curing agents to yield high-performance thermosetting plastics.

Approximately 100,000 to 200,000 pounds of pure MDA and 1.5 million pounds of polymeric MDA are consumed annually in epoxy curing. This is the largest non MDI use of MDA. The use of MDA for epoxy applications falls into three broad categories: as a curing agent for structural laminates, as a curing agent for epoxy coatings, and as an intermediate for TGMDA (a specialty epoxy resin). In past years, MDA has been used in epoxy molding powders, stick solders, fiberglass cloth-epoxy laminates, and casting compounds. Epoxy resins are used in a variety of applications including coatings (47%), laminates and composites (22%), casting and molding (9%), flooring (7%), and adhesives (6%).

Epoxy resins have a wide variety of applications in structural laminates, including filament winding, wet lay-up laminates, and potting, casting and encapsulation.

Filament-wound epoxy structures (or products) cured with MDA has numerous uses including casings of rockets (Trident, Midgetman, and space shuttle), oil drilling pipe. Pipe for chemicals, and fuel tanks for military aircraft.

Wet lay-up laminates cured with MDA are used as structural parts for aircraft. The epoxy is used to impregnate a reinforcing fiber which has been woven into a cloth. The impregnated cloth, called a "prepreg," is then refrigerated to arrest curing until final molding occurs under heat and pressure.

Liquid epoxy resins cured with MDA are used in the potting, casting, and encapsulation of electrical components. MDA is preferred because the resulting product has excellent insulation characteristics and low shrinkage. Casting and curing occur in closed vacuum chambers.

MDA is used to cure epoxy coatings that exhibit good resistance to chemicals and nuclear radiation. MDA has been specified in numerous nuclear power plant applications.

Because of the variety of processes which use MDA in this application, process descriptions, additional control technologies and populations exposed were examined for specific applications of MDA in epoxy use.

(b) *Specific Epoxy Uses*— (1) *Filament Winding*— (i) *Use.* Filament-wound epoxy structures (or products) cured with MDA have numerous uses including casings of rockets (Trident, Midgetman, and space shuttle), oil drilling pipe, Pipe for chemicals, and fuel tanks for military aircraft.

(ii) *Process Description, Current Control Technology and Exposure Areas.* The production of filament wound products uses MDA as the curing agent in epoxy resin systems. The resin systems (either epoxy containing MDA, or polyester) are formulated, heated, and fed into an impregnation bath. The use of flake MDA has recently been discontinued at some facilities in favor of a granular form although the broad applicability of this process change is sharply disputed. Fiberglass filaments, formed into a band, are fed through the bath, impregnating the filaments with resin. The band is partially cured by passing them over a curing drum and then are wound around various sizes of heated steel mandrels. In other instances, the band is wound directly on a mandrel and then sent to a cure oven. After winding, these mandrels are sent to a final cure oven where they are cured at 350–475 F. Exposures to MDA may occur in the mixing, impregnation, winding, or curing areas, as well as in maintenance operations and quality control and laboratory activities.

(iii) *Populations Exposed and Levels of Exposure.* ICF estimates that there are approximately 25 firms doing filament winding. Based on data from one plant. ICF also estimates that the representative size for these firms is approximately 300 employees, with approximately 15 in each facility being exposed to MDA. Thus, out of a total worker population in the industry of approximately 7500, ICF estimates that 375 are potentially exposed to MDA.

On the other hand, the Heiden survey estimates that there are only 12 filament winding plants and that between 4–70 workers (average 25/plant) are potentially exposed per shift. Further, most of the survey respondents reported three eight hour shifts. Since the Heiden data are based on four survey responses, whereas ICF's estimate of exposed workers per plant is based on one plant only, it is reasonable to adopt the Heiden estimate that approximately 75 workers per facility may be exposed. On the other hand, the Committee adopted ICF s estimate of the total number of facilities as a conservative worst-case assumption. Combining these two estimates, the Committee concluded that some 1875 workers are potentially exposed to MDA in this industry.

ICF reported several available estimates for levels of worker exposure: short-term exposures to MDA were reported by a state inspection agency to range from 0.17 mg/m ^{3} (21 ppb) to 0.67 mg/m ^{3} (83 ppb); however, these figures may not be representative of 8 hour exposures. A more thorough study by NIOSH, based on 8 hour TWA measurements, reported the following levels: mixing operator: 0.013 mg/m ^{3} (1 ppb); tape machine operator 0.007 mg/m ^{3} (0.87 ppb); winding head operator: 0.011 mg/m ^{3} (1 ppb); final cure oven operator 0.001 mg/m ^{3} (0.1 ppb).

The data collected from four facilities in the Heiden survey are generally consistent with the NIOSH measurements reported by ICF. In the resin mixing area, the Heiden exposure levels range from 0.1 ppb to 20 ppb. The higher values, however, are all from short term samples (less than one hour). The long term measurements are all less than 10 ppb and hover near 1 ppb on the average. In the filament impregnation area Heiden reports an exposure level of 1 ppb; and in the winding head area the measured exposure levels for long-term samples were also near 1 ppb. The only exceptions are short term samples which sometimes exceed 20 ppb. It is important to note, with regard to the interpretation of the significance of short-term vs. long term samples, that all the available data indicate that MDA related work in this industry is 4 hours per day or less.

The Heiden survey also reports exposures in the filament winding industry near 6 ppb for quality control and laboratory personnel.

(iv) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* Since worst-case exposures in this industrial segment are approximately 20 ppb, only maintenance of existing control technologies should be required to continue compliance with this limit. ICF estimated that the engineering controls necessary to achieve a PEL of 1 ppb would be the use of a vacuum lid for pneumatic feeding of the solid MDA. The engineering controls ICF considered necessary to achieve a PEL of 0.1 ppb are a glove box with a pneumatic feed system and improved exhaust ventilation over the tape machine and winding head.

The exposure level data in the Heiden report, as discussed above, suggest that worst case levels of exposure in this sector are near 20 ppb. Not all respondents provided exposure data, however, and some facilities self-reported (without supporting evidence) that they were currently below 10 ppb, but not below 1 ppb. The respondents in the survey estimated that the controls needed to reduce exposure levels were the same type of controls recommended by ICF, such as automated resin dispensing equipment and increased ventilation at the mixing stations, tape machines, winding heads and cure ovens. The survey results, however, suggested that these controls would reduce levels to 1 ppb, not 0.1 ppb as ICF estimated.

(v) *Production, Consumption, Capacity.* ICF estimated, and the Committee agrees, that there are approximately 25 filament winding operations which use a total of approximately 500,000 pounds of MDA yearly. Heiden estimates that the filament winding firms purchase and consume between 8,019 and 204,036 pounds of MDA annually. Approximately 62% of the MDA purchased is in liquid form, 12% are pellets or solids, and 25% are flakes or powder. The MDA content of the materials varies from 60–98% depending upon the physical state of the product purchased.

(vi) *Exposure Profile.* Approximately 1,875 workers are estimated to be exposed to MDA in the filament winding industry. The Committee considers that worst-case estimates of average exposures are as follows: 20 ppb in the resin-mixing, impregnation, and filament winding areas, which constitute 31%, 7%, and 38%, respectively, of the exposed workforce. Laboratory workers, who constitute some 10% of the exposed workforce, have levels of 6 ppb. There are no data for estimating exposures to maintenance workers, who make up approximately 14% of the exposed workers.

(2) *Potting and Encapsulation*—(i) *Use.* Potting and encapsulation consists of pouring polyurethane-epoxy mixtures containing approximately 10 percent MDA (used as a curing agent) into molds or fixtures. For encapsulation, the fixture is assembled around an electric component, cable connector, or cable juncture.

(ii) *Process Description, Current Control Technology, and Exposure Areas.* A variety of similar processes are used in this industry. Solid or liquid

MDA materials may be manually mixed with other ingredients and then poured into molds or over electrical fixtures, or applied as adhesives or coatings (e.g. for insulation). Processes such as grinding, blending, mixing, extrusion, manual application, pouring and curing may be involved. Current engineering controls typically include general dilution exhaust ventilation and/or local exhaust ventilation with process enclosures.

(iii) *Populations Exposed and Levels of Exposure.* A typical potting and encapsulation facility is the Wabash Magnetic Co. Plant in Huntington, Indiana, as reported by ICF. This facility employs 362 employees, but only 3 per shift are potentially exposed to MDA. Exposed employees fit into one of three job classifications: mixer operator, preform operator, and chemist. The mixer and preform operator are exposed for approximately 1,560 hours per year; the chemist is exposed for approximately 250 hours per year. Four batches of epoxy compound are produced daily, each using MDA as the hardener. This facility operates for a single shift 260 days/year. Average daily worker exposure is approximately 6 hours/day. The two potting and encapsulation firms reporting in the Heiden survey were quite similar to the Wabash plant, except that they operated three shifts/day.

ICF estimated that there are approximately 63 facilities which do potting and encapsulation. Heiden estimated that there are only 5 facilities, yet information supplied by the representative from the Department of Energy (DOE) indicated that DOE alone oversees 7 contractor-operated facilities which do potting and encapsulation, suggesting that the Heiden estimates may be far too low. Furthermore, the Committee considered it reasonable to adopt the ICF estimate that 63 facilities are doing potting and encapsulation, after considering the number of firms which manufacture electrical components, cables, or cable junctures. Thus, the Committee agreed that it is reasonable to conclude that there are 63 facilities with approximately 3 workers per shift (3 shifts per day) performing potting and encapsulation operations. A worst case estimate of the total potentially exposed population would thus be approximately 567.

The submissions to the Committee by the DOE also contain some exposure data. In October 1983, sixty-one area and personal samples were taken during a number of short-term manual operations which occur at DOE facilities. These operations involve casting, coating, and bonding. Only 7 of the 61 samples indicated any detectable concentrations of MDA. The highest concentration found (0.232 mg/m^3) (26 ppb) was for a 25 minute weighing and transfer operation during which the workers were wearing respirators. No information was available on the number of such 25 minute operations which the employees performed during the day, nor were exposures represented as 8 hour TWA's. From these data, it is reasonable to conclude that a worst-case estimate of exposures in the weighing and mixing areas is the Potting and Encapsulation sector is 10 ppb.

(iv) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* The sum of the available data indicates that this sector of the MDA industry already complies with PEL's of 20 ppb and 10 ppb. Increased enclosure, local exhaust ventilation, and use of a metered feed system would be needed, according to ICF, to achieve compliance with PEL's of 1 and 0.1 ppb. The Heiden survey concurs that all facilities now comply with the 20 and 10 ppb PEL's. The survey also reports that 50% of the reporting firms were in compliance with 1 ppb, and the remaining respondents stated that use of local exhaust ventilation and in some instances process enclosure would be necessary to achieve a PEL of 0.1 ppb.

(v) *Production History.* ICF estimated that there are approximately 63 facilities which consume approximately 5,000,000 pounds yearly for potting and encapsulation operations. Heiden estimates that for potting and encapsulation operations, approximately 50% of the purchased materials are flakes and 50% are liquids.

(vi) *Exposure Profile.* Approximately 63 firms carry out potting and encapsulation. A worst-case estimate of the total number of potential exposed workers is 567, with approximately one-third being exposed to levels of 10 ppb (dry resin and blending areas), one third with exposure to levels of 1 ppb (liquid resin transfer and packaging areas), and one third to 0.1 ppb (in curing areas).

(3) *Molding/Bonding of Tools and Specialty Small Parts*—(i) *Use.* In the molding/bonding of tools and specialty small parts, a similar MDA-polyurethane epoxy mixture is used to seal joints and bond or join materials or pieces.

(ii) *Process Description, Current Control Technology and Exposure Areas.* Molding and Bonding operations use processes similar to those found in potting and encapsulation operations. Solid or liquid MDA materials may be manually mixed with other ingredients and poured into molds to make tools, hardware or specialty small parts. Processes such as grinding, blending, mixing, extrusion, pouring, curing, and manual application may be involved. Current engineering controls typically include general dilution exhaust ventilation and/or local exhaust ventilation with process enclosures.

(iii) *Populations Exposed and Levels of Exposure.* ICF estimates that there are approximately 22 facilities performing molding/bonding of tools and specialty small parts, but they provide no supportive evidence for their estimate. The Heiden survey estimates that approximately 22 firms perform these operations, on the basis of six survey responses. Heiden also reports that these plants operate three shifts per day and that each shift has three potentially exposed workers. In the absence of better data, it is reasonable to conclude that there are 22 firms. The Committee has agreed to use an estimate of 22 facilities with an average of 3 exposed employees per facility per shift, with three daily eight hour shifts. The upper-bound estimate of the population potentially exposed to MDA in this industrial sector would thus be 198.

Exposure data for different work areas in this industry were not available, but it is reasonable to assume, as ICF did in its analysis, that exposures during liquid feed operations would be similar to exposures at the liquid packaging areas for reprocessors (0.01 mg/m^3, 1 ppb), and that exposures during preform operations, where the resin is cured, would be similar to exposure levels at the winding head for filament winders (0.0011 mg/m^3 or 0.1 ppb).

(iv) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* The available data indicates that this sector of the MDA industry already complies with PELs of 20 ppb and 10 ppb. Increased enclosure, local exhaust ventilation, and use of a metered feed system would be needed, according to ICF, to achieve compliance with PEL's of 1 and 0.1 ppb. The Heiden survey concurs that all facilities now have exposure levels of 20 and 10 ppb. The survey also reports that 50% of the reporting firms were in compliance with 1 ppb, and the remaining respondents stated that use of local exhaust ventilation and, in some instances, process enclosure would be necessary to achieve a PEL of 1.0 ppb.

(v) *Production History.* ICF estimates approximately 100–300,000 pounds of MDA are consumed by small casters or toolers. Heiden estimates that approximately 80–32,923 pounds are consumed by molding/bonding operations. Further, Heiden estimates that 66% of the MDA purchased is in liquid form with 17% purchased as a flake and 17% as a pellet or solid.

(vi) *Exposure Profile.* Approximately 22 firms carry out molding/bonding with MDA-containing materials. A worst-case estimate of the total number of potentially exposed workers is 198, with approximately one-third being exposed to levels of 10 ppb (dry resin and blending areas), one third exposed to levels of 1 ppb (liquid resin transfer and packaging areas), and one third to levels of 0.1 ppb (in curing areas).

(4) *Intermediate in TGMDA and PACM-20 Production*-(i) *Use.* MDA is an intermediate in the production of tetraglycidyl methylene dianiline (TGMDA), a high performance epoxy resin that is utilized by the military and commercial aerospace industry. Special tetraglycidylmethylene-dianiline (TGMDA) derived epoxy resins are reinforced with glass, graphite, boron, or aramide fibers. Recommended applications for the reinforced composites include aerospace and leisure products, structural adhesives, laminates, tooling and casting products, and structures such as wings and fuselages.

MDA is also the starting material for the cycloaliphatic diamine curing agent produced by Dupont, Bis(p-aminocyclohexyl) methane, known by its trade name of PACM-20. The by-product of this reaction is a chemical that is also used as a curing agent. This is a triaromatic compound with the trade name BABA.

(ii) *Process Description, Current Control Technology, and Exposure Areas.* TGMDA is formed by the reaction between epichlorohydrin and MDA. The only point of exposure is the introduction of the MDA into the process (opening of containers, dumping of MDA into reactor). The reaction itself is carried out in closed vessels and the MDA is consumed.

PACM-20 is manufactured by hydrogenating MDA until the aromatic rings are fully saturated.

(iii) *Populations Exposed and Expected Exposures.* Only limited information on the number of employees exposed was available from any source. It appears that the manufacture of either TGMDA or PACM-20 is accomplished through batch processing and judging by the estimate of the amount of MDA used for this purpose, produced in small amounts. The process appears to be similar to potting and encapsulation in that probably only 2 or 3 employees would be potentially exposed per shift. Three shifts would probably operate, thus a total of 6 to 9 workers may be potentially exposed per firm. Information gathered from the Heiden survey indicates that 2 firms are using MDA for TGMDA manufacture (PACM-20 use is assumed from Heiden survey information). Thus, a rough estimate of the number of workers exposed could be generated by assuming that only two firms produce this substance and that approximately 9 workers per facility are exposed. Therefore, approximately 18 workers totally may be exposed to MDA as a result of producing TGMDA or PACM-20.

CMA reports the maximum airborne MDA concentration found in TGMDA manufacture was 7.5 ppb, but no further data were provided. This appears somewhat high considering that exposure during liquid 4,4'-MDA feed operations at the can-out area for a reprocessor is approximately 1 ppb. Nonetheless, the CMA data is the best available and as such has been used as a worst-case estimate to generate cost estimates.

(iv) *Additional Controls Needed to Comply With the Proposed Exposure Levels.* If the CMA estimates are assumed to be correct, some sort of metered feed system would be required to comply with a PEL of 1 ppb.

(v) *Production, Consumption, Capacity.* ICF estimates that approximately 200,000 pounds of MDA are used to produce this product annually.

(vi) *Exposure Profiles.* There are approximately 2 firms which produce TGMDA and PACM-20 and approximately 18 workers are exposed to levels of 7.5 ppb.

(5) *Coating (Polybismalimides) of Printed Circuit Boards and Fabrication of Airplane Parts*—(i) *Use.* In a process similar to production of wire coating polymers, MDA is condensed with maleic anhydride and polymerized by a free radical mechanism or by addition of more MDA. The resulting polybismaleimide has been used with limited success as a coating for printed circuit boards with approximately 200,000 pounds of MDA being used for this purpose yearly.

Polybismaleimides based on MDA are also being used for fabrication of components or new-generation military aircraft. General Dynamics has developed F-16XL aircraft with experimental delta wings fabricated from polybismaleimide.

(ii) *Process Description, Current Control Technology, and Exposure Areas.* The most typically produced printed circuit boards are two-sided or multilayered; the individual layers are bonded together by an epoxy glass material. The boards are subjected to a mild chemical "etch" to make their surfaces microporous to promote adhesion of a catalyst and electroless plating. This process is followed by a series of water rinses and acid dips. It is not clear exactly how MDA coatings might be applied, nor is it reported whether the spent solvents, acid solutions, or rinsewater generated during board preparation contain MDA.

No information was found on how MDA is added prior to application, the number of workers involved, or the time of involvement in hours/day or days/year. The company that holds the patent on the process indicated that the MDA content is a maximum of 4 percent, so MDA exposure is probably low. No by-products were identified.

(iii) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* Information concerning the exposure levels currently found in this industry are not available. However, if additional controls are needed, such controls would be comparable to those needed in similar MDA operations. More precisely, local exhaust ventilation or metered feeding systems would be needed depending upon the frequency that the MDA is added and the physical form it is in. The Committee made no estimates of risks or compliance costs for this sector, due to the lack of meaningful data and the likelihood of minimal estimates.

(6) *Dyes and Pigments.* (i) *Use.* Since MDA can be diazotized by treatment with nitrous acid, a number of azo dyes can be produced from the resulting diazonium salt. Springborn Laboratories, Inc. lists 22 patents in which MDA is mentioned as a dye intermediate. They estimate that 50,000 pounds/year of MDA is used for this purpose, but contacts made by ICF could not support this conclusion. The Color Index lists two dyes made using MDA, Index Numbers 24750 and 42500. However, only number 42500 is still reported to be manufactured. The listed manufacturer is the American Cyanamid Organic Chemicals Division at the Bound Brook Works in New Jersey. PEDCO contacted this facility and was told that the dye in question, Basic Red No. 9, is no longer produced. Contacts at the Dyes Environmental and Toxicology Organization (affiliated with the Synthetic Organic Chemical Manufacturers Association) confirmed that no dyes are now being produced using MDA. A general discussion of the process used to manufacture dyes is provided since MDA may be used in this manner in the future.

(ii) *Process Description, Current Control Technology, and Exposure Areas.* Dyes can be produced in a wide variety of quantities. The equipment needed for making azo dyes is simple. A well stirred batch tank suffices for the reactor. Filter presses are generally used for recovering the finished products and tray driers for drying the dye presscake.

Because of the relatively small quantity of MDA reportedly used in the past and the large number of potential dyes, the batches involved with MDA use were likely small. Such small batches are normally produced in open vessels where there could be potential worker contact with chemicals as they are added. There would be low potential for worker contact after the initial addition of the MDA.

(iii) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* Specific information concerning potential MDA exposure levels in this industry are not available. However, if additional controls are needed it is likely that such controls would be comparable to those needed in reprocessing. More precisely, local exhaust ventilation or metered feeding systems would be needed depending upon the frequency with which the MDA is added and the physical form it is in.

(7) *Qiana Yarn*—(i) *Use.* Qiana^{R} is nylon yarn with silk-like appearance produced by the E.I. Du Pont de Nemours Co. It was introduced by Du Pont in 1968 for use in luxury fabrics. Up until 1982 Qiana^{R} fibers were made using MDA as an intermediate. Qiana^{R}, although still produced, is no longer produced from MDA.

(8) *Polyurethane Curing*—(i) *Use.* The primary use of MDA as a polyurethane curing agent is to cure aliphatic isocyanate systems (not MDI or TDI) whose pot life is long enough to use even in a spray system.

Some specific applications of MDA with aliphatic isocyanates include: moisture and abrasion resistant castings, in continuous casting operations (in foundries), as polymide casting materials (in military operations), and in the past in spandex (bra and girdle materials).

(ii) *Process Description, Current Control Technology, and Areas of Exposure.* A typical facility is the Hysol Electronic Chemicals' Olean, New York facility which produces both polyurethane hardener containing MDA (the production of this material is considered MDA reprocessing and is not included in the polyurethane curing discussed here) and cast polyurethane parts.

The process used for polyurethane production begins by blending the polyurethane hardener with the prepolymer in a mix metering machine at 60 °C. This is a closed process. The polyurethane mixture is then poured into molds, and the molded parts are oven cured at about 100 °C. The polyurethane casting and curing area is 30 feet by 8 feet in a room 100 feet by 200 feet. The total area of the manufacturing facility is 220,000 square feet.

Engineering controls employed by Hysol include ceiling exhaust fans, a mix-meter machine, and 4 to 6 canopy hoods in the molding room and curing ovens exhausted to the outside. Hysol is somewhat atypical in that it has a mix-meter machine; many polyurethane curing companies probably add the curing agent manually to the prepolymer and thus would have several more employees potentially exposed to MDA. All MDA is assumed to be reacted before the molding step.

(iii) *Populations Exposed and Expected Exposures.* Information collected from the Hysol Corporation indicates that the company employs a total of 280 people at this location, yet only four employees in two job classifications are potentially exposed to MDA related to polyurethane curing. These exposed employees are: 3 custom casting molders for 2080 hours per year per employee, and 1 lab technician for less than 100 hours per year. Polyurethane casting operations are performed for 250 days/year, and the average daily worker exposure is assumed to be 8 hours per day.

ICF aggregated the data on populations exposed and reported that a typical facility usually employs 280 workers with only 3–4 being exposed to MDA. Assuming that there are 31 facilities, as reported by ICF, the total worker population of 8,680 has approximately 93 employees exposed.

The record has evidence of several incidents of worker exposure but very little exposure data. Samples taken by NIOSH at one facility found that MDA levels were below the limit of detection in the twelve air samples collected.

In another case, NIOSH was asked by the Independent Union of Rotameter Workers to investigate the health effects of asbestos fibers and several organic substances upon workers at the Fischer and Porter Company in Warminster, Pennsylvania. The highest of three ambient measurements of MDA taken by NIOSH was 10 ppb in the potting room near the oven.

Since sufficient data were not available to develop exposure scenarios, the Committee estimated that exposure is similar to the exposure at the filament winding head for the molding operations (0.011 mg/m^3) (1 ppb) and is similar to the exposure at the filament-wound pipe cure oven for the final cure ovens (0.001 mg/m^3) (0.1 ppb).

(iv) *Production, Capacity, and Consumption.* ICF reported that there are approximately 31 firms using MDA in polyurethane curing and that 250,000 pounds of MDA are used yearly for this purpose. The total worker population appears to be approximately 8,680 workers with 93 directly involved in handling MDA.

(9) *Intermediate for Pharmaceuticals, Herbicides, etc.*—(i) *Use.* There is no current reported use of MDA as an intermediate in the production of pharmaceuticals or pesticides. A general discussion of the process used to manufacture pharmaceuticals is provided since MDA may be used in this manner in the future.

(ii) *Process Description, Current Control Technology, and Areas of Exposure.* Most of the compounds used as drugs today are prepared by chemical synthesis. It is estimated that 80 percent of these are produced by a batch process. The basic reaction vessel is a mixing tank with a welded bottom and a clamp on top.

A pharmaceutical product is usually manufactured in a campaign, during which one or more process units are used for a few weeks or months to manufacture enough of the compound to satisfy its projected sales demand. Campaigns are usually tightly scheduled, with detailed coordination extending from procurement of raw materials to packaging and labeling of the product.

The only potential worker exposure to MDA used in the manufacture of pharmaceuticals is when MDA would be added to the reaction vessel as an initial reactant. Exposure would probably not occur if MDA were produced as an intermediate in the closed vessel and totally consumed in a following reaction. Exposure from addition of MDA would occur only once per batch for a relatively short duration and the exposure frequency would probably not exceed a few work days per year. Personal protective equipment typically used for hazardous materials in the pharmaceutical industry includes eye protection, disposable gloves, disposable or air-supplied suits when required and respirators. Engineering and work practice controls include totally enclosed reaction vessels, restricted areas, and showers.

(10) *Coatings.*— (i) *Use.* MDA is used to cure epoxy coatings that exhibit good resistance to chemicals and nuclear radiation. MDA has been specified in

numerous nuclear power plant applications. Examples of the coatings used to achieve various effects are:

(1) Fusion Bonding-3M Scottscoat 202, 203, 213, and 214, which are applied as a sprayed dry powder into metal pipes or used in fluidized bed operations to coat parts that are subsequently cured at 425 to 450 °F. Operations are automated, but potential exposure may occur during supplying the mix or during cleaning of the application chamber. About 10% pure MDA is used in the product formulation.

(2) Surface Sealers-Ameron Company holds a patent on the use of dry MDA in a resin system used for coating marine constructions. Liquid hardeners consisting of a eutectic blend of MDA and m-phenylene-diamine are widely used. The manufacture of corrosion resistant pipes and storage vessels for the petrochemical industry probably represents the greatest application.

(ii) *Process Description, Current Control Technology, and Areas of Exposure.* The processes used in this industry sector are illustrated by the operations of one of the two independently managed divisions of a Brea facility in that use MDA. The Corrosion Resistant Pipe Division utilizes MDA as a hardening agent with an epoxy resin to make filament wound pipe and pipe fittings, as described in an earlier section. This division began continuous operations in 1962. The second division, the Protective Coatings Division, produces protective coatings and uses MDA in the formulation of a few of the several coatings that are produced. This latter use of MDA began only recently at this location.

The two divisions are located in separate, pre-fabricated metal structures with 30 foot ceilings and concrete floors. Ventilating windows are located about 20 feet up on the walls. (H040.245)

Several types of MDA-containing protective coating formulations are prepared in the Protective Coatings Division building. The MDA containing protective coatings formulation consists of a dry part containing MDA and silica sand, and a liquid epoxy resin which is mixed with the dry part by the customer immediately before application. There are few individuals potentially exposed to MDA in this operation. Predominantly, potential exposure is limited to an equipment operator and a materials handler. A supervisor is also present. Other protective coatings are made in this division, but, none are reported to contain MDA. At a similar plant in Buffalo, about six employees were involved with preparing formulations that contained MDA.

Initially, high purity flaked MDA is received in metal drums from a supplier. The flake is run through a pulverizer that also separates the material into two sizes. The pulverizing unit is exhaust ventilated to capture airborne MDA which might otherwise be released when the contents of the drums are dumped into the unit. Very fine dust is collected by a bag house air filtration system adjacent to the pulverizing equipment. This entire operation is essentially closed (all junctions are sealed). The material (after sizing) is pneumatically blown into metal collection drums.

The blending operations combine the use of a filler (silica sand) and the pulverized MDA. Drums of pulverized MDA are brought to the blending equipment by a forklift. The equipment operator tilts the drum into the opening of the fluidizing unit. Airborne dust is captured at two points within the hood surrounding the chute opening to the fluidizer. Several drums can be loaded into the fluidizer which blows the material dumped into it over a large twin shell blender. After the last drum is loaded into the fluidizer the operator uses an air line at 5 psi to blow any remaining MDA into the chute. Silica sand is similarly added to the fluidizer. After blending, the equipment operator places five gallon steel cans underneath the twin shellmixing unit chute and operates a lever that allows the product to fill the cans. An exhaust vent collar, which encloses about two-thirds of the drop chute circumference, controls airborne dust while the product fills the cans. The materials handler labels cans, stores filled cans after the equipment operator fills them, and maintains the housekeeping in the area.

Both the pulverizing unit and fluidizing blending units are exhaust ventilated to separate baghouse dust collectors. Automatic shakers keep the filters from overloading. Periodically, the equipment operator and materials handler in this area drop the contents of the baghouse chute into an attached plastic bag. When filled, the bag is taped closed, removed from the chute and placed in a large steel drum. Filled drums are sealed with a ring clamp lid and sent to a waste disposal site. The materials handler sweeps the floor area with a moist sweeping compound 1 to 3 times per day. Every two weeks overhead equipment and all accessible equipment is washed down with water by the two workers assigned to this area. Overall, chemical containment in this operation appeared well controlled.

(iii) *Additional Controls Needed to Comply With the Proposed Exposure Levels.* The available data suggest that this industry sector already complies with a 20 ppb PEL. In order to comply with a PEL of 10 ppb, it would be necessary to install a pneumatic feed system to handle solid MDA and semi-circular or equivalent local exhaust hoods at transfer points. To reach a level of 1 ppb, it would be necessary, in addition, to install glove boxes at transfer points.

(iv) *Populations Exposed and Expected Levels of Exposure.* A typical company is probably the Brea Corporation where approximately 6 employees per shift are potentially exposed to MDA and the company operates two eight hour shifts (worst-case could be 3 shifts). Furthermore, at least 3 companies produce these coatings (3M, Ameron, Brea), so at least 54 workers are potentially exposed. In the absence of available data, the Committee assumed 250 days of exposure per year.

A reported incident of human exposure involved production of a component of an insulating material. Between 1966 and 1972, twelve male workers who manually mixed MDA into an epoxy resin contracted hepatitis. A thirteenth individual also contracted hepatitis; his MDA exposure reportedly occurred during the pulverization of MDA flakes for the process. Atmospheric MDA levels were measured at 0.1 ppm (100 ppb) during the first survey. The major route of exposure of MDA to the workers was through skin contact. Each worker had at least one hand exposed to the mixture for several hours per shift. About 100 employees were potentially exposed to MDA at the facility. The process has subsequently been automated to prevent any future worker skin exposure to MDA.

Sufficient data were not available to develop exposure scenarios, but it is reasonable to assume that the handling of solid (granule or flake) MDA would result in exposures comparable to those found in reprooessing operations. A worst case estimate for exposure levels in such operations in reprocessing is 20 ppb.

(v) *Downstream Applications.* There is potential for employee exposure when applying MDA-containing coatings to concrete structures, ships, corrosion resistant pipe (petroleum industry), etc.

One manufacturer of an MDA-cured epoxy concrete coating ships the MDA in a screw-top container into which the liquid resin is poured. Mixing thus occurs in the same vessel in which the MDA is shipped, reducing dusting and worker exposure.

Most of the MDA is not shipped in this type of container however, so that thus potential for worker MDA in construction activities may be significant, although very little information is available to describe the levels of exposure to which these downstream users might be exposed or the number of workers who may be affected. One can assume that the potential to be exposed dermally is also significant in this user group. In addition, the number of potentially exposed workers can be assumed to be significant.

A 1974 report indicated that 300 workers over an 18-month period were directly exposed to MDA while applying epoxy coating to concrete walls at a nuclear power plant construction site. There were 4,000 construction workers at the site during the period.

At a construction site visited by NIOSH, the worker mixing the MDA-cured epoxy coating wore a disposable face mask, rubber gloves with cotton linings, and work clothes. Testing of the linings of the gloves showed MDA present after 2 hours use. It was speculated that the inside contamination was due to the workers removing and putting gloves back on during work hours.

Two incidents have been reported involving the exposure of workers to MDA during the curing of epoxy resins used as coatings. In one report, 6 workers out of a total work force of 300 men who applied epoxy resins containing MDA to concrete walls developed clinical hepatitis with elevated transaminase levels 2 days to 2 weeks after starting work. MDA was mixed with liquid epoxide at the work site and applied to walls with trowels or a spray gun.

(vi) *Production, Consumption, and Capacity.* ICF estimates that approximately 200,000 pounds of MDA are produced and used annually for coatings purposes. The exact number of facilities producing coatings is not known but at least three facilities have furnished product or process information.

(11) *Wire Coating*—(i) *Use.* This sector represents a large use of high purity MDA. The typical wire enamel formulation contains as many as twenty components. MDA is totally converted in the reaction and a polyester-imide thermosetting resin is produced.

(ii) *Process Description, Current Control Technology, and Areas of Exposure.* There are several processes by which wire coating can be accomplished. In one process, MDA flakes are delivered to the plant in cardboard level packs. Two operators, equipped with respirators, manually open the containers and then empty the contents into a funnel-type receiver. Protective shoes, eye protection, and chemically-resistant aprons or plastic coated disposable coveralls and respirators are also worn by plant personnel. The funnel is connected to a chute that is directed through a manhole cover of the process reactor or kettle. Other ingredients are also manually discharged into the kettle in the same manner as the MDA. It takes between 1 to 2 hours to load a kettle with all of the chemicals; 10 to 20 minutes are required for the MDA. Usually only one of the batch-operated kettles is on-line at a time. Each batch takes about 20 to 30 hours to complete. Maximum extraction temperature reached is 220° C.

The MDA is completely consumed by the reaction, initially reacting to form an imide acid. The polyimide forming components usually include anhydrides such as trimellitic anhydride and polyamines. Oxydianiline, although quite expensive, can also be used as the diamine, but MDA is preferred because of its price, performance, and availability. The volatile fraction of the kettle contents is recaptured in a packed column reflux condenser that discharges back into the kettle. The kettle contents are reacted to a desired viscosity. This is periodically checked by taking samples from a sample well on the kettle. The wire enamel is completed when the heated batch is mixed with other chemicals (e.g., solvents) as required. This is done in the kettles or a thinning tank until the solids content of the enamel is 25 to 40 percent. The material is packaged in 55-gallon enamel drums, tank cars, or tank wagons. Proper DOT labels are attached depending on the solvents.

MDA represents a small percentage of the process feed. Since the MDA is completely consumed in the kettles during the chemical reactions, there is no MDA exposure in subsequent mixing or wire coating operations.

The raw material charging system and the kettle are both under negative draft; the drawn air is discharged into the reflux condenser. This system acts as a pollution control system whereby any MDA particles generated during handling of the flake material are drawn into the hooding system and removed in the packed column. These particles are captured in the condenser and washed into the autoclave with condensed gases (e.g., ethylene glycol) and water vapor.

The wire enamel is reheated in the purchaser's wire tower and is applied to an electrical conductor such as copper, silver, or stainless steel. There is no opportunity for exposure to MDA in this process, as the MDA is consumed in the production of the enamel itself.

Another example of MDA use in wire coating is Ameron's Protective Coatings Division. Ameron manufactures two specific products, Nu-Klad and Tideguard, that utilize MDA in a dry mix. These mixes are one part of two-part resin systems. The two are mixed at the customer's job site just prior to application. Ameron's manufacturing process involves receiving flaked MDA, blending MDA with Aerosil in a drum roller, pulverizing the MDA in a feed screw, power screening MDA to 30 or 60 mesh, loading MDA and other ingredients into a twin shell blender (machine tool used in blending operations) via a pneumatically operated fluidizer, blending the various ingredients in a twin shell blender, and then canning the blended ingredients directly from the bottom of the twin shell into 5 gallon cans for shipment. (HO40.243)

ICF identified the typical facility based on data from Schenectady Chemical's Schenectady, New York facility.

Engineering controls used by the facility include: (1) General building ventilation providing 5 air changes per hour (the ventilation fans are turned off during loading of MDA to help minimize dusting); (2) a blower system providing 1–1½ inches of water of negative pressure to retain materials during the addition of MDA and other chemicals to the reactor kettle; and a scrubber/blower system to collect particulate materials from reactor exhaust.

(iii) *Populations Exposed and Levels of Exposures.* Information concerning the number of workers potentially exposed and expected levels of exposure can be compiled from the descriptions provided by the companies discussed below:

(1) The *P.D. George Co.* receives MDA in flake form from BASF in airtight, resealable plastic bags in fiber cartons. Employee exposure to MDA is limited to the loading of this raw material into the batch reactors. This procedure normally takes two people 30 minutes. About 2 batches are formulated each month. Any of 15 to 20 workers are potentially exposed on an intermittent basis. Exhaust ventilation is applied during the loading process and respiratory protection (half-face cartridge respirator) is provided. Dermal protection includes the wearing of disposable garments over their coveralls as well as gloves. No air samples had been collected by the company at the time of a NIOSH survey in the early 1980's.

(2) *General Electric Co.* uses MDA to formulate their Imidex® magnet wire enamel. Flake-form MDA is loaded into a ventilated batch reactor by two men. Between 1800–2500 pounds of MDA is considered to be a normal batch size. Approximately 35 batches of Imidex® are made each year. A total of 12 people are potentially exposed to MDA during the loading, sampling, and testing phases. The process appears moderately well controlled and sampling data indicate exposures of less than 0.3 ppm (300 ppb) for short-term 20–30 minute sample periods and less than 10 ppb for an 8-hour TWA.

(3) *Schenectady Chemical Co.* formulates a wire coating enamel similar to its competitors. Use of MDA is approximately 1200 pounds per month. The reaction vessel is ventilated during the loading of dry MDA and workers wear dust respirators, vinyl coated gloves, and cotton overalls. Gravimetric samples have been collected since 1976. Results of air samples (collected during a 20-minute vessel-charging task) indicate concentrations of 0.8 mg/m^3 (98 ppb). The daily frequency of such short exposures is not reported.

ICF estimates that there are 4 wire coating facilities with approximately 44 employees at each site being exposed to MDA. The Heiden survey estimates 7 facilities. Using worst-case assumptions, these estimates suggest that there are approximately 308 employees potentially exposed at these facilities. ICF also assumed that worst-case exposures were the same as found in other flake feed operations (0.66 mg/m^3) (81 ppb).

Information obtained from the Heiden survey substantiate the findings by ICF on the number of workers exposed per facility. However, data from the same survey indicates that the current practices in the industry have reduced exposure levels to 0.03–0.1 mg/m^3 (3.7–12 ppb). These figures were furnished by the Heiden survey and appear to be more accurate than assumptions made by ICF.

(iv) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* Based on the data in the Heiden survey, this industrial sector is already operating below exposure levels of 10 ppb. ICF's assessment is that it is possible to achieve a PEL of 10 ppb by increased ventilation and maintenance. ICF also concluded that some firms may be able to use granular MDA instead of the more dusty flakes to reduce levels to below 3.7 ppb. Also according to ICF, to achieve 1 ppb a pneumatic feed system (vacuum lid) for granular MDA would be necessary and to achieve 0.1 ppb a glove box with a pneumatic feed system would be necessary.

Data obtained through the Heiden survey suggest that to obtain 10 ppb all that is needed is air flow optimization and spouted containers. To achieve 1 ppb, respondents stated that loading shrouds would be necessary in one case whereas a second commenter stated that redesign of loading hoppers and chutes would be necessary. To achieve 0.1 ppb, both respondents felt that sealed loading rooms with air locks and remote or enclosed loading areas would be necessary. These findings were consistent with those proposed by ICF.

(v) *Production, Consumption, Capacity.* It is estimated that approximately 200,000 pounds of MDA are used annually in the production of coated wire. The MDA purchased is approximately 98% pure MDA and is purchased either in flake or granular form.

(vi) *Exposure Profile.* The Committee estimates that there are 308 (seven facilities with 44 exposed employees each) employees potentially exposed to MDA in the wire coating industry. A worst-case estimate of the average level of exposure to these employees is near 10 ppb.

(12) *Rubber Processing*—(i) *Use.* It is reported that MDA has been used for making anti-ozonants, particularly phenyldiamines, for use in rubber compounding.

Uniroyal was reported to be the only major supplier of rubber anti-ozonants to be using MDA. It was also reported that 10,000 pounds/year of polymeric MDA was used for this purpose. Recent contact with Uniroyal indicated that better substitutes are now available and that no one now uses MDA as an antioxidant in rubber.

(13) *Antioxidants*—(i) *Use.* All aromatic amine antioxidants or anti-ozonants are made from aniline or substituted anilines. The antioxidant is normally incorporated into dry rubber on a mill or in a Banbury mixer, although it may be added to latex. Since MDA is a reactant, the only worker exposure in this type of rubber processing application would occur in the handling, pouring, and disposal of the MDA containers (H040.23).

Formulation allows a consistent rate of vulcanization and increases the strength of the rubber. It is likely that MDA was used as an intermediate to make such a rubber processing chemical. It is unlikely that MDA would be used by itself (H040.35).

Natural and synthetic rubbers are stabilized against deterioration during storage by MDA. When added to synthetic rubbers such as chlorinated or brominated butyl rubber, MDA improves resistance to oxidation, heat aging, and flex-fatigue failure. The addition of MDA to rubber copolymers of methyl vinyloxyacetate compounded with carbon black improves snap and solvent resistance.

MDA can also be used to vulcanize chlorosulfonated polyethylenes. The cross-linking is believed to occur by the reaction of amino groups with the sulfonyl chloride groups of the polymer.

(14) *Ketamine Production*—(i) *Use.* MDA has a potential for use in ketamine systems used as curing agents for polyurethane coatings.

(ii) *Process Description, Current Control Technology, and Exposure Areas.* A typical polyurethane system requires separate isocyanate and coreactant components that must be mixed to initiate reaction. Ketamines in coatings react with water in the air. The resulting polyamide becomes available for reaction with isocyanate in the system. In a ketamine system, components may be stored in one package; reaction occurs after the material is applied and thus exposed to atmospheric moisture. When the ketamine reacts with the moisture in the air, free MDA which acts as a curing agent is released. Ketamines can be used as curing agents for solventless, high solids epoxy coatings and polyurethane coatings. The use of the ketamine delays curing time; this allows the use of coatings with a high solids content in spray equipment. Epoxy coatings cured with a ketamine should not exceed a thickness of ten mils. An estimated 40,000 pounds/year of MDA is used for this purpose.

No information was found on ketamine systems manufacture from MDA. In the use of ketamine to make polyurethane, the emissions would be the same as in normal polyurethane coatings; the major exception is that there would be no emissions from the addition or mixing of the MDA, as these operations are not necessary. There was no information found on the numbers of workers involved or the time of involvement. The only by-product of ketamine use is the potential release of a small amount of MDA.

(15) *Advanced Composite Materials Production*—(i) *Use.* Advanced composite materials are substances which are used to impregnate fibers which in turn are used to form various structures. These products may be produced for sale as pre-pregs or may be produced at the worksite (wet lay-ups) for impregnation processes. At least two companies, the HITCO Division of

Armco Aerospace and Ferro Corporation, produce one composite material, PMR–15. PMR–15 is beginning to be used commercially as a replacement for titanium in jet engine components. It is planned to be used in the engines for the F–18 fighter, the B–1 bomber, and the new versions of the 747 and 767.

Boeing Vertol Corporation uses MDA in an on site impregnation process (wet lay-ups) in the construction of fiberglass helicopter blades.

(ii) *Process Description, Current Control Technology, and Areas of Exposure.*

In a typical operation, PMR–15 is manufactured in a batch process. MDA is obtained in flake form in 200-pound drums. The flaked MDA is scooped from the drums and weighed into a dispensing container and then poured into a reactor. The MDA is heated to 130 °F for approximately 40 minutes in the presence of a solvent. Once the MDA is fed into the reactor vessel, all the subsequent steps in the process of converting MDA to PMR–15 are enclosed. A hood is located above the MDA melting vessel. The molten MDA is pumped to the PMR–15 blending reactor where it is mixed for 3–4 hours with other pre-mix components to produce PMR–15.

Until recently, the Boeing Vertol Corporation used a process which required mixing the epoxy resin, then impregnating cloth, which was then used to construct helicopter blades. Common practice was to do the lay-ups in the middle of the shop away from the ventilation. Today only the pattern shop uses wet epoxies while the blade shop purchases pre-impregnated or B-staged filament cloth.

(iii) *Populations Exposed and Levels of Exposure.* The typical facility identified by ICF is U.S. Polymeric Hitco Material's Santa Ana, California facility. This facility employs 180 people including employees in administration, sales, operations, maintenance, quality control, research, accounting, and support. Less than six operators handle raw MDA and less than 27 operators work in the PMR–15 production area. The Committee assumed that 3 operators handle raw MDA, and 13 operators work in PMR–15 production. There are 6 job classifications associated with PMR–15 production in which workers are potentially exposed. These are: Mixers who handle the mix and pre-preg; inspectors who take samples and check product quality; technicians who perform quality control tests; maintenance operators who repair equipment but do not handle any material directly; and materials controllers who handle only closed feedstock and product containers. PMR–15 is manufactured 3 days each month, or 36 days per year. Average daily exposure is assumed to be 8 hours/day.

Employees handling raw MDA wear disposable coveralls (assumed to be the type without boots, hoods, and elastic wrists), gloves (Saran-coated Tyvek), safety glasses, and a dust respirator. Coveralls are discarded after each shift. Work uniforms are provided for all employees; the facility launders these daily.

Personal monitoring was performed at this facility in 1983. A known quantity of air was drawn through a fiberglass filter treated with sulfuric acid. High-pressure liquid chromatography was used to analyze the samples for MBA; some difficulty was experienced in distinguishing MDA from other amines. This monitoring provided the following estimates of air levels of MDA:

Raw MDA transfer and dissolution—less than or equal to 0.2 (25 ppb) mg/m^3.

Mixing—less than or equal to 0.54 mg/m^3 (68 ppb).

PMR–15 dissolution and reinforcement—less than or equal to 0.01 mg/m^3 (1 ppb).

Hot melt PMR–15 reinforcing—less than or equal to 0.004 mg/m^3 (0.5 ppb).

The PMR–15 production area is restricted during raw MDA handling only. Annual physicals, including lung function and urine tests, are provided to potentially exposed employees. Lavatories, clothing change areas, a lunchroom, and showers are currently or will soon be available. It is assumed that showers are currently not mandatory.

ICF estimates that there are 4 facilities which manufacture PMR–15, with a typical facility employing approximately 180 workers, 16 of whom are potentially exposed to MDA per shift (48 total), for an estimate sector total of 192 workers potentially exposed through this process.

Heiden Associates, on the other hand, estimates that there are approximately 12 firms performing this operation and that the average number of workers potentially exposed to MDA are approximately 10 per facility per shift with most firms operating three shifts (30 total). This estimate yields a total of 360 workers potentially exposed in this sector. The Committee believes that the Heiden estimates are more reasonable in that they are based on actual survey responses.

The Heiden survey also provided very limited information on the current exposure levels in the industry. Only one of the respondents provided data, and exposure levels reported for resin mixing operations were 0.75 ppb (vapor) and non-detectable for dust. For pre-preging operations vapor levels of 4.5 ppb were reported while dust levels remained non-detectable. These levels are somewhat lower than those reported by ICF, yet the Committee considers it reasonable to use ICF's values as a worst case estimate when performing cost estimates, as follows: material handling operations (weighing, transfer), 20 ppb; pre-impregnation areas (1 ppb).

ICF estimated that at least 10 facilities are engaged in wet lay-up work. Based on the NIOSH survey it appears that at least 6–8 workers at each site are potentially exposed. It also appears reasonable to assume that between 60–80 are exposed industrywide. In the absence of data, the Committee assumes exposure 250 days/year.

A NIOSH Hazard Evaluation and Technical Assistance activity determined that MDA concentrations were 0.225 mg/m^3 (28 ppb) and 0.465 mg/m^3 (57 ppb) over 10–15 minute periods when lay-ups were done in the pattern shop, but there is no available information about the frequency of these operations.

(iv) *Additional Controls Needed to Comply With the Proposed Exposure Levels.* ICF estimated that the use of granular MDA, instead of the dustier MDA flakes, would allow this industry to achieve levels of 6 ppb and 3.7 ppb. The feasibility of this approach was disputed by industry representatives on the Committee, however, suggesting that the change may not always be possible. To achieve a lower level of 1 ppb, ICF considered it necessary to utilize a pneumatic feed system (vacuum lid) along with the recommended use of granular MDA. To achieve levels of 0.1 ppb, ICF estimated the need for further additions of a glove box and local exhaust ventilation over the PMR–15 production vessel.

There is practically no information available regarding existing engineering controls in the wet lay-up laminate industries. It is reasonable to assume, however, that technologically feasible controls would be similar to those applicable in pre-preg manufacture.

(v) *Exposure Profile.* Some 430 (10 wet lay-up firms, 12–PMR–15 firms) workers are potentially exposed to MDA in the Advanced Composite Materials Production sector of the industry. Information about current exposure levels and controls is very limited. As a worst case estimate, the Committee has tentatively concluded that twenty percent of the workers are exposed to levels in excess of 20 ppb, while the remaining 80% are exposed to average levels of 1 ppb. The available data suggest that workers are typically exposed to MDA 36 days/year.

(17) *PMR–15 Use*—(i) *Use.* PMR–15 Pre-impregnated materials, or pre-pregs, have wide use as structural components for aircraft.

(ii) *Process Description, Current Control Technology, and Areas of Exposure.* The process is basically composite manufacturing and use of the impregnated materials. Tables are positioned in the center of the room where PMR–15 pre-preg material is cut. The pre-pregs are molded by manually laying up the pre-pregs on to structures. Later, the imidized PRM–15 impregnated graphite flakes are pressed into parts and autoclaved to cure the molded material.

(iii) *Populations Exposed and Expected Levels of Exposure.* Heiden estimates that there are approximately 14 facilities with an average of 6 workers per shift who are potentially exposed to MDA. Each firm operates three eight hour shifts; thus the total estimated number of potentially exposed workers would be 352.

Exposures for short term periods were reported in the Heiden survey of 0.225 (27 ppb) and 0.465 mg/m^3 (57 ppb) over 10–15 minute periods. Heiden's respondents reported 8 hour TWA's as non-detectable or at 0.3 ppb. One firm reporting in the Heiden survey stated that compliance with all the proposed PELs had been achieved, except for 0.1 ppb.

(iv) *Additional Controls Needed to Comply With the Proposed Exposure Levels.* To achieve permissible exposure limits of 20, 10 and 1 ppb most firms surveyed by Heiden used a combination of general and local exhaust ventilation. To achieve 0.1 ppb one firm estimated that improved ventilation would be all that would be necessary.

(v) *Exposure Profile.* There are approximately 252 workers (14 facilities with 18 workers per facility) exposed in the PMR–15 pre-preg use sector. The Committee estimates that all workers are exposed to levels of MDA less than or equal to 1 ppb.

(18) *Maintenance Workers*—(i) *Use.* Maintenance workers are exposed to MDA through the routine maintenance of repair of MDA production equipment. The Committee chose to develop industry profiles and subsequent costs and benefits of its recommended standards separately for production workers and maintenance workers. The Committee considers it reasonable to adopt this approach because these two groups of workers are typically exposed in a very different manner, and because the approaches to exposure reduction are also fundamentally different. Production workers are typically exposed to relatively predictable, repetitive and narrow ranges of exposure, and their exposures can typically be reduced by the application of relatively standard, "off the shelf" engineering controls. The exposures of maintenance workers, in contrast, are typically highly variable and unpredictable, they often span a very wide range, and they are not typically amenable to "off the shelf" engineering controls. Furthermore, engineering controls used to reduce the exposure of production workers may also reduce the *background* exposure of maintenance employees. Ironically, however, these same controls also increase exposure for maintenance workers whose job requires the upkeep of these engineering controls.

(ii) *Process Description, Current Control Technology, and Areas of Exposure.* Typically these maintenance operations usually involve the disassembly of production equipment, repair of the malfunctioning part, and reassembly. Oftentimes, maintenance workers must first remove residual material from piping or equipment components before beginning repair activities.

(iii) *Populations Exposed and Expected Levels of Exposure.* Very little data regarding maintenance employees were available to the Committee. ICF's data sources made scant mention of maintenance, and the Heiden survey estimated the number of MDA-exposed maintenance workers for only four sectors, and provided only two measurements of actual exposure levels (0.05 ppb as the average of four 20-minute samples in MDA/MDI production, and 250 ppb as the average of three 8-hour personal samples in reprocessing). The percentage of MDA exposed workers who are maintenance workers in the Heiden survey ranged from 18% to as high as 55%, with the high figure corresponding to the highly automated MDA/MDI Production Sector. Without considering the Production sector, the overall average is 23%. On the other hand, maintenance workers were reported in the Heiden survey to be potentially exposed only 1–2 hours/day, in contrast to production workers who were typically exposed 4–8 hours/day. Based on these very rough estimates, the Committee assumed that, on the average, maintenance workers constitute an equivalent of 5% of the workforce (23% of the workers exposed, one-fourth the time of production workers). These workers are not included in the Benefit summary in Exhibit 3. The Committee further assumed, as a worst-case estimate, that typical TWA exposure levels for maintenance employees are 250 ppb (2 mg/m^3).

(iv) *Additional Controls Needed To Comply With the Proposed Exposure Levels.* The Committee believes that to protect maintenance workers reliance on personal protective equipment to a much greater degree than is the case for production workers would be necessary. Typically, a maintenance worker would be required to wear the most elaborate ensemble of protective clothing required under the standard (gloves, boots, disposable poly-lined tyvek with hoods and booties, taped cuffs) as well as full-face air-purifying respirators or, more likely, powered air-purifying respirators. Finally, the Committee assumed that such protective equipment would reduce MDA exposure to zero.

(v) *Exposure Profile.* The Committee believes that there are approximately 252 workers exposed to worst-case exposures of 250 ppb (2.0 mg/m^3) of MDA.

(iii) Analysis of Risks and Benefits

(*a*) *Introduction.* In this chapter, the Committee estimates the potential benefits (in terms of deaths avoided) accruing as a result of its recommendations for a proposed standard. The analysis of this section demonstrates that as a result of the recommendations being made by the Committee approximately 14 production workers' lives and 4 maintenance workers' lives will be saved for every year of reduced exposure by establishing a permissible exposure limit of 10 ppb and reducing to the extent feasible dermal absorption of MDA. The range of the number of cancers averted per year of exposure varies from less than one-tenth of a case per year in one industry sector (Intermediate) to nearly 9 per year (Filament Winding sector). A significant proportion of the estimated lives saved are the result of the reduction in dermal exposure, whereas the reduction in airborne exposure levels makes a much smaller contribution to the reduction in risk.

While the Committee was able to estimate the benefits from reducing the risks due to occupational cancer, it was unable to quantify the effects that the recommended standard provisions would have on reducing other occupational risks resulting from MDA exposure (e.g., reduced incidence of dermatitis, liver toxicity, etc.).

(*b*) *Background.* The purpose of any proposed standard reducing exposure to

MDA is to prevent or reduce the adverse health impacts of exposure to this substance in the workplace. Quantitative estimates of the benefits of the alternative exposure limits of MDA exposure are presented in this chapter, and their implications for regulatory policy are discussed.

The analysis used by the Committee relies on the dose response relationship derived from animal data supplied by the NTP bioassay, coupled with human exposure data obtained from Committee members, and during site visits to MDA related facilities, as described in Chapter II (Industry and Exposure Profiles). The two sets of data, together with assumptions about a number of human absorption parameters, were used to generate quantitative estimates of the reduction in cancer risks associated with MDA exposure under the previously defined regulatory scenarios (i.e., reduced skin contact and PEL's of 20, 10, and 1 ppb). Quantitative estimates of the benefits achieved by reducing the incidence of other toxic effects (liver disease and dermatitis) could not be generated, due to a lack of applicable dose-response model.

(c) *Benefits Assessment Methodology.* The calculations of the cancer risks experienced by workers exposed to MDA and of the benefits associated with reducing exposure were performed using the methods described by the Committee in section IV. The Committee recommended that OSHA use Table 49 in making risk estimates and also as the basis for making benefit determinations. For a complete discussion of the recommended table and the underlying assumptions, see section IV entitled Risk Assessment.

Data from the NTP bioassay were used to derive dose-response parameters for tumor induction using a "one-hit" version of a standard multistage model, which provided the best fit to the data. Pooled-tumor data were used. The assumptions used to estimate dose-response parameters differed from OSHA's analysis in the following respects, however:

Doses were calculated using a body weight rather than surface area conversion factor for adjusting animal doses to human equivalent doses. The "k" value which was ultimately used in calculating worker risks took the value of 0.770 (mg/kg day)−1.

Risks were calculated using the following equation:

$R=1-e-\mathrm{LADD}(k)$

where R is the lifetime incremental risk of cancer calculated for a population receiving a lifetime average daily dose (LADD) of MDA, with k being the dose-response parameter just discussed (0.770). Lifetime average daily doses were calculated as follows:

$\mathrm{LADD}=(\mathrm{DI}+\mathrm{DP}+\mathrm{DH}+\mathrm{DB})\cdot d\cdot/\cdot 1\ \mathrm{y\ L\ w}$

where, DI, DP, DH, and DB are the daily doses associated with inhalation and dermal exposure to workers' palms, hands and forearms, and upper bodies, respectively. The d/y term is the average days per year of exposure, L is the worker's life expectancy measured from the earliest possible age at first exposure. Risks were calculated assuming one year's exposure and a post-exposure lifespan of 54 years (first exposure at age 20); W is the average body weight of the exposed workers (70 kg). Daily doses were calculated as follows:

$D_I=\mathrm{TWA}\cdot I_I\cdot \mathrm{BR}\cdot T,$
$D_P=\mathrm{DR}_P\cdot A_P\cdot I_P\cdot T^2,$
$D_H=\mathrm{DR}_H\cdot A_H\cdot I_H\cdot T^2,$
$D_U=\mathrm{DR}_B\cdot A_B\cdot I_b\cdot T^2,$

with the variables defined as:

TWA = time-weight average air exposure level
BR = on-the-job breathing rate (1.2 m^3/hr)
T = hours of exposure per day (assumed to be equal for all routes of exposure within a given industry)
I_I = inhalation intake factor (=0.5)
I_p, I_H, I_B = dermal intake factors for palms, hands forearms, and upper body, respectively (all equal to 0.02 hr^{-1})
A_p, A_H, A_B = Area of workers' palms (410 cm^2), hands and forearms (2,830 cm^2), and upper bodies (9,280 cm^2) exposed to MDA.
DR_p, DR_H, DR_B = MDA dermal deposition rates for palms, hands and upper body.

Time-weighted average airborne MDA levels and the number days per year of exposure were estimated for the baseline case (no MDA regulation) based on monitoring data obtained as described in Chapter II. Based on NIOSH data analyzed by EPA, dermal deposition rates for the MDA/MDI production sector were estimated as 0.009 mg/cm^2-hr for the palms and 0.0056 mg/cm^2-hr for the forearms and upper body. In all other industry sectors, the deposition rates were estimated as ranges from 0.00014 to 0.00067 mg/cm^2-hour for forearms and upper body in the baseline (no MDA regulation) case. It was also assumed that workers, if exposed dermally for more than four hours per day, would wash their hands and forearms after four hours (e.g., before lunch), and skin deposition would begin again on those surfaces from a level of zero. For cases where the standard was in place (all proposed PEL's), we assumed that the dermal protection strategy would completely eliminate exposure through the palms of workers. Dermal deposition rates were scaled to the amount of airborne MDA and exposures were recomputed for the workers' forearms and upper body and estimated to be reduced to 0.0006, 0.0003, and 0.00003 mg/cm^2-hr, under the 20, 10 and 1 ppb PELs respectively, on the basis of the same NIOSH data cited above.

Individual cancer risks were calculated assuming one year's exposure at the levels specified in each of the cases analyzed. Population cancer risks for one year of exposure were estimated by multiplying the predicted individual risk values for one year of exposure by the estimated number of workers exposed in each of the MDA industry sectors. The final population risk values therefore correspond to the total number of cases of cancer associated with MDA exposures during one year of operation for each of the industry sectors analyzed. Risk calculation algorithms were built into the cost-effectiveness spreadsheet model used to calculate the cost-effectiveness of the various regulatory alternatives.

(d) Results of Cancer Risk Analysis. The results of the Committee's analysis of cancer risks associated with exposure to MDA are summarized in Exhibit 3 (Benefit Summary for MDA Standards for production workers) and Exhibit 5 (Benefit Summary for MDA standards for Maintenance Workers). Column 1 in the Table has identifying entries for the baseline level (current conditions) and each of the three alternative PELs (expressed as mg/m^3, so that 0.160 mg/m^3 equals 20 ppb; 0.080 mg/m^3=10 ppb; 0.008 mg/m^3=1 ppb), for each industry sector. Therefore, the input data and the resulting risk calculations for any given sector and PEL can be read from left to right from the entries in the Table. Columns 2–14 reflect input data regarding airborne and dermal exposure. Columns 15–17 indicate the dermal deposition rates discussed above. Columns 18–21 reflect the lifetime average daily doses for inhalation, palm, forearms and upper body respectively. Column 22 is the estimated lifetime average total dose. Column 23 is the MDA cancer dose response (slope) parameter, also discussed above.

Column 24 is the calculated individual cancer risk per year of exposure which, when multiplied by the number of workers exposed in each industry (Column 25) yields the number of cases of cancer expected from each year of industry operations. Finally, Column 27 reflects the marginal benefit (cases of cancer prevented) when going from baseline conditions to PEL 1 (20 ppb) or those of going from PEL 1 to PEL 2 (10 ppb) or from PEL 2 to PEL 3 (1 ppb).

For most of the industry sectors studied, the cancer risks associated with a single year's exposure to MDA under current baseline conditions are quite high. The benefits (reduced cancers) which would result from each of the alternative PEL's are also substantial.

The individual risk levels for filament winding, potting and encapsulation, molding and bonding, Polyurethane curing, wire coating, intermediates, PMR-15 use, reprocessing and coatings range between 1.0 and 5.0×10^{-2}. This would correspond to a lifetime incremental cancer risk 1 to 5 cancer cases per hundred workers exposed for ten years (a typical average employment tenure in the plastics and resins industry) and a risk of 4.5 to 22.5 per hundred workers exposed for an entire 45-year working life. The calculated risk levels for the other three industries are somewhat lower, ranging from 9.0×10^{-4} per year of exposure for MDA production, to 6×10^{-4} for advanced composites materials production (0.6 to 0.9 cancers per hundred workers per 10 years of exposure). Exhibit 6 (which is equivalent to Exhibit 3 for production workers) summarizes the risk which would be expected among maintenance employees under these assumptions, and the benefits which would result upon compliance with protective clothing and respirator requirements. The exhibit illustrates that approximately 4 cancer cases would be avoided for each year of operation of all industry sectors.

Most of the benefits estimated in both Exhibit 3 and 5 are the result of the estimated reduction in dermal exposures. This is the case because the model utilized effectively postulates that much of the risk results from the dermal doses of MDA experienced by the workers. In all but the MDA/MDI Production industry sector, the total estimated dermal dose is at least one order of magnitude greater than the estimated inhalation dose. In several instances, the gap is three orders of magnitude. The MDA/MDI Production sector is the only one where the dermal and inhalation doses are closer in magnitude (the dermal dose is approximately twice the inhalation dose). Since much of the dermal dose is effectively eliminated with the imposition of requirements of the standard which apply at any alternative PEL, it is reasonable that most of the benefits accuring from the standard result from the imposition of these requirements. The reductions in MDA doses resulting from reductions in the PEL to 10 ppb or 1 ppb would contribute only minimally in terms of additional reduced cancers.

(iv) Technological Feasibility

(a) Introduction. This chapter assesses the technological feasibility of reducing worker exposure to MDA in the affected industry sectors to the alternative levels under consideration and provides the basis for estimating the engineering control costs calculated in Chapter V (compliance costs). Engineering surveys done by PEI provided the estimates of the type of engineering controls needed to achieve compliance with the exposure scenarios proposed by the Committee, e.g. glove boxes. This assessment of technological feasibility is based on information collected by the Committee which provides information on the current exposure levels resulting from existing controls, and on the availability of controls needed to reduce exposures from current levels. This information was compiled from the ICF report, the Heiden report, information supplied to the Committee, and from the trade literature.

(b) Technological Feasibility of Engineering Controls— (1) *MDA Production for MDI Synthesis, MDA for Sale, and MDA for Import.* This section assesses the technological feasibility of achieving the alternative levels in the MDA production for MDI synthesis, MDA for sale, and MDA for import sectors. The process units in these sectors are similar in that they are large, automated, enclosed systems comprised of process vessels, pipes, valves, pumps, and compressors. The packaging or unloading operations are also similar in that they are enclosed operations using systems of varying types of local exhaust ventilation. On the basis of available information, the Committee believes that installation of additional controls will not be needed for this industry sector to achieve 20 ppb. Both Heiden and ICF concluded that this sector is already capable of achieving 20 ppb with improved maintenance of existing control technologies, such as improved seals on piping and seals maintenance.

The Committee also concluded that worker exposures to MDA can be reduced to less than 10 parts per billion (ppb) 8-hour time-weighted average (TWA) through the use of

- Enclosure of the flaking cylinder and the use of a semicircular hood for drum filling and weighing, the use of the plexiglass covers which are already on the flaking cylinders, and the improved maintenance described before.

In order to achieve a 1 ppb permissible exposure limit (PEL), the Committee believes that these particular industry sectors would be required to completely enclose process equipment and isolate workers from production areas. Major changes in the way these firms operate would be necessary to achieve such a degree of process isolation, and worker isolation which would still be necessary. Furthermore, eliminating routine MDA exposures in activities that are typically performed outside the control room may be necessary (i.e. collecting quality control samples). Given the scope of some of these controls, the Committee does not believe that they can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA.
2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(2) *MDA Reprocessing.* This section assesses the technological feasibility of achieving the alternative levels in the MDA reprocessing sectors. The process units in these sectors are similar in that they involve the opening of containers, dumping of MDA, grinding or pulverizing of MDA, mixing of MDA, and repackaging of a final product containing MDA. On the basis of currently available information, the Committee believes that this sector is currently achieving 20 ppb through the use of general and local exhaust ventilation. To continue to achieve 20 ppb this sector needs to maintain existing technologies. Furthermore, based on current information worker exposures to MDA will be reduced to less than 10 parts per billion (ppb) 8-hour time-weighted average (TWA) through the use of pneumatic feeding systems for solid MDA transfer and semi-circular hoods or the equivalent for packaging operations.

In order to achieve a 1 ppb permissible exposure limit (PEL), the Committee believes that this particular industry sector would be required to use pneumatic feed systems to feed MDA into the reaction vessel, switch to granular rather than flake MDA, use glove boxes, and semicircular hooding or the equivalent for container filling operations. In some cases, process changes such as buying premixed liquids rather than mixing solutions with MDA solids may be necessary. Initially, ICF presented information which indicated that switching to granular forms of MDA would be adequate to reduce dust levels and would require no change in process technology. The industry representatives on the Mediated Rulemaking Committee indicated that this was not the case and that the use of granular forms of MDA would in most instances require major process changes. In addition, they indicated that the use of granules rather than flake did not reduce dust levels significantly as assumed by ICF. The Committee found these arguments convincing and concluded that the use of granules in lieu of flake may not always be process compatible.

In addition, the Committee believes that the use of glove boxes or total enclosure may cause major changes in the way these firms operate and would be too restrictive. Given the scope of some of these controls, the Committee does not believe that they can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA.

2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(3) *Filament Winding.* This section assesses the technological feasibility of achieving the alternative levels in the MDA Filament Winding sector. The process units in these sectors are similar in that they involve the opening of containers, dumping of MDA, grinding or pulverizing of MDA, and mixing of MDA, followed by filament impregnation, filament winding and curing. On the basis of currently available information, the Committee believes that worker exposures to MDA have already been reduced to 20 ppb and maintenance of existing control technologies in most cases will continue to keep employee exposures at or below 20 ppb. To achieve a 10 ppb PEL, the Committee concluded that it would be necessary for facilities to install pneumatic feed systems to handle solid MDA.

In order to achieve a 1 ppb permissible exposure limit (PEL), the Committee believes that in addition to the pneumatic feed system, this industry sector would be required to use pneumatic feed systems with vacuum lids to feed solid MDA, glove boxes, and improved ventilation over the tape machine and winding head.

The Committee believes that the use of glove boxes or similar total enclosures may cause major changes in the way these firms operate and would be too restrictive. Given the scope of some of these controls, the Committee does not believe that they can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA.

2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(4) *Potting and Encapsulation.* This section assesses the technological feasibility of achieving the alternative levels in the MDA Potting and Encapsulation industry sector. The process units in these sectors are similar in that they involve the opening of containers, dumping of MDA, grinding or pulverizing of MDA, and mixing of MDA. On the basis of currently available information, the Committee believes that worker exposures to MDA have already been reduced to 10 ppb and that continued use and maintenance of existing control technologies is all that is needed to keep worker exposure to at or below 10 ppb.

In order to achieve a 1 ppb permissible exposure limit (TWA) a metered feed system for MDA-containing materials and local exhaust ventilation in the preform area would be necessary. In this industrial sector, the operations involving the use of MDA are considered "small" fractions of the normal workloads. While it may be possible to use local exhaust ventilation in preform areas, it becomes very restrictive to use metered systems when one considers the frequency with which these MDA operations are performed on a daily basis. Thus, considering the scope of some of these controls, the Committee does not believe that they can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA and in fact most of these firms are already achieving this PEL.

2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(5) *Molding/Bonding of Tools and Specialty Small Parts.* This section assesses the technological feasibility of achieving the alternative levels in the MDA Molding/Bonding of Tools and Specialty Small Parts. The process units in these sectors are similar to reprocessing in that they involve the opening of containers, dumping of MDA, grinding or pulverizing of MDA, and mixing of MDA. On the basis of currently available information, the Committee believes that worker exposures to MDA have already been reduced to 10 ppb and that continued use and maintenance of general and local exhaust ventilation is all that is needed to maintain worker exposures at or below 10 ppb.

In order to achieve a 1 ppb permissible exposure limit (TWA) a metered feed system and local exhaust ventilation in the preform area would be necessary. In these particular industrial sectors, the operations involving the use of MDA are considered "small" fractions of the normal work loads. While it may be possible to use local exhaust ventilation in preform areas, it becomes very restrictive to use metered systems when one considers the frequency with which these MDA operations are performed on a daily basis. Thus, considering the scope of some of these controls, the Committee does not believe that they can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA and in fact most of these firms are already achieving this PEL.

2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(6) *Intermediate (TGMDA and PACM–20 Production).* This section assesses the technological feasibility of achieving the alternative levels in the TGMDA and PACM–20 industrial sectors. The process units in these sectors are similar in that they involve the opening of containers and dumping of MDA into a reactor. On the basis of currently available information, the Committee believes that worker exposures to MDA are already below 10 parts per billion (ppb) 8-hour time-weighted average (TWA).

In order to achieve a 1 ppb permissible exposure limit (TWA) a metered feed system would also be necessary. In this industrial sector, the operations involving the use of MDA are considered "small" fractions of the normal work loads. Thus, considering the scope of some of these controls, the Committee does not believe that they can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA and in fact most of these firms are already achieving this PEL.
2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(7) *Coatings (Polybismalimides) of Printed Circuit Boards and Fabrication of Airplane Parts.* This section assesses the technological feasibility of achieving the alternative levels in the coatings of printed circuit boards and fabrication of airplane parts sectors. No information was found on how MDA is added prior to application to the boards or parts but an industry representative indicated that the mixture contains a maximum of 4% MDA, thus it can be assumed that the MDA exposure is probably low. On the basis of currently available information, the Committee believes that worker exposures to MDA will be reduced to less than 10 parts per billion (ppb) 8-hour time-weighted average (TWA) through the use of some combination of the following engineering controls and work practices:

- Use of local exhaust ventilation over the areas where MDA is handled.
- Metered feeding systems.

Not enough information was available to make a determination concerning achievement of a 1 ppb permissible exposure limit (TWA). It can be assumed that some combination of general and local exhaust ventilation in addition to the use of metered feeding systems could reduce levels to 1 ppb or lower. The Committee, however, because of the uncertainties posed by this sector does not believe that these controls can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA.
2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

Because of the limited nature of the available data concerning this industry, no costs of compliance were attributed to this sector.

(8) *Dyes and Pigments.* Information furnished by the industry representatives indicate that MDA is no longer used in dye or pigment manufacture, therefore, technological feasibility is not an issue.

(9) *Quiana Yarn.* The literature indicates that quiana yarn is no longer produced using MDA, thus technological feasibility is not an issue.

(10) *Polyurethane Curing.* This section assesses the technological feasibility of achieving the alternative levels in the polyurethane curing sector. The process units in these sectors are similar to reprocessing in that they involve the opening of containers, dumping of MDA, grinding or pulverizing of MDA, and mixing of MDA. On the basis of currently available information, the Committee believes that worker exposures to MDA have already been reduced to 10 ppb and that continued use and maintenance of general and looal exhaust ventilation is all that is needed to maintain worker exposures at or below 10 ppb.

In order to achieve a 1 ppb permissible exposure limit (TWA) a metered feed system and local exhaust ventilation in the preform area would be necessary. In these particular industrial sectors, the operations involving the use of MDA are considered "small" fractions of the normal work loads. While it may be possible to use local exhaust ventilation in preform areas, it becomes very restrictive to use metered systems when one considers the frequency with which these MDA operations are performed on a daily basis. Thus, considering the scope of some of these controls, the Committee does not believe that they can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA and in fact most of these firms are already achieving this PEL.
2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(11) *Intermediate for Pharmaceuticals, Herbicides, Etc.* There is no current reported use of MDA as an intermediate in the production of pharmaceuticals nor pesticides, thus technological feasibility is not an issue.

(12) *Coatings.* This section assesses the technological feasibility of achieving the alternative levels in the polyurethane curing sector. The process units in these sectors are similar to reprocessing in that they involve the opening of containers, dumping of MDA, grinding or pulverizing of MDA, and mixing of MDA. On the basis of currently available information, the Committee believes that worker exposures to MDA have already been reduced to 20 ppb and that continued use and maintenance of general and local exhaust ventilation is all that is needed to maintain worker exposures at or below 20 ppb. To achieve a level of 10 ppb, facilities would have to install pneumatic feed systems and local exhaust hoods at MDA transfer points.

In order to achieve a 1 ppb permissible exposure limit (TWA), a glove box at transfer points, metered feed system and local exhaust ventilation in the preform area would be necessary. In these particular industrial sectors, the operations involving the use of MDA are considered "small" fractions of the normal work loads. While it may be possible to use local exhaust ventilation in preform areas, it becomes very restrictive to use metered systems when one considers to what extent these MDA operations are performed on a daily basis. Thus, considering the scope of some of these controls, the Committee does not believe that they can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA and in fact most of these firms are already achieving this PEL.
2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

Construction: For the downstream use of MDA it appears that to maintain worker exposures to below 10 ppb, requires the use of:

(A) Local exhaust ventilation equipped with HEPA filter dust collection systems.

(B) General ventilation systems.

(C) Vacuum cleaners equipped with HEPA filters.

(D) Use of work practices or other engineering controls that the Assistant Secretary can show to be feasible.

To maintain worker exposures below 1 ppb, all potentially exposed workers would be required to wear a respirator. Both the Committee and OSHA have made repeated attempts to acquire information on the number of workers potentially exposed in the construction sector and on the exposure levels. Some information indicates that workers do not handle MDA in these downstream applications, since the manner in which the MDA is packaged precludes such. However, the Committee assumed a worst case scenario for this sector and estimates that exposures would be comparable to those found in pre preg use and as such recommended the feasibility considerations above. Compliance costs for this sector were not generated due to the lack of information on the number of potentially exposed workers.

(13) *Wire Coating.* This section assesses the technological feasibility of achieving the alternative levels in the wire coatings sectors. On the basis of currently available information, the Committee believes that worker exposures to MDA are already equal to or less than 10 parts per billion (ppb) 8-hour time-weighted average.

To achieve a PEL of 1 ppb it would be necessary to install pneumatic feed systems (vacuum lids), shift to granular MDA, to use glove boxes. It is not clear that all these firms can use the granular form of MDA without making changes in production equipment or in their processes. Thus, due to the scope of some of these controls, the Committee does not believe that these controls can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA.
2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(14) *Rubber Processing.* Contact with the Uniroyal Company indicate that MDA is no longer used as an antioxidant, thus technological feasibility is not an issue.

(15) *Antioxidants.* No information was available concerning the exposure limits anticipated in this sector nor were feasibility considerations made.

(16) *Ketamine Production.* No information was found on the amount of MDA released during ketamine production although the potential release of a small amount of MDA is assumed. Technologically feasibility with a 10 ppb TWA is assumed to be feasible.

(17) *Advanced Composite Material Production.* This section assesses the technological feasibility of achieving the alternative levels in the PMR–15 production sectors and other advanced composite material production sectors. On the basis of currently available information, the Committee believes that worker exposures to MDA will be reduced to less than 10 parts per billion (ppb) 8-hour time-weighted average (TWA) through the use of some combination of the following engineering controls and work practices:

- Increased use of local and general exhaust ventilation.

To achieve 1 ppb it would be necessary to install pneumatic feed systems (vacuum lids) for granular MDA and to use glove boxes. It is not clear that all these firms can use the granular form of MDA without making changes in production equipment or in their processes. Thus, due to the scope of some of these controls, the Committee does not believe that these controls can be implemented across all of the plants in these sectors without major changes in some facilities.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for these sectors to achieve a 10 ppb TWA.
2. It is not technologically feasible for these sectors to achieve a 1 ppb TWA.

(18) *PMR–15 Pre Preg Use.* This section assesses the technological feasibility of achieving the alternative levels in the PMR–15 pre pregs use sectors. On the basis of currently available information, the Committee believes that worker exposures to MDA are currently at 1 ppb and that maintenance of existing control technology will keep workers exposures to at or below 10 ppb.

(19) *Maintenance Workers.* The Committee believes that it is not technologically feasible to achieve any of the alternative levels in maintenance workers through the use of engineering controls. The Committee considers it reasonable to adopt this approach because of the typically highly variable and unpredictable manner in which maintenance workers are exposed and because the nature of their exposures often span a very wide range, and they are not typically amenable to "off the shelf" engineering controls although portable local exhaust ventilation systems are often used to help minimize exposure. Primary reliance on personal protective clothing and equipment appears to be a more acceptable control technology for a worker population which is exposed to a multitude of contaminants many of which are skin absorbable. Furthermore, the Committee believes that the recommended respirator usage and the stringent personal protective requirements will reduce the exposure of maintenance workers to limits less than those required by this recommended standard.

(c) Technological Feasibility of the Short Term Exposure Limit (STEL). The efficiency of the engineering controls and work practices discussed above have been analyzed and the Committee has determined that the same controls and work practices that will reduce 8-hour TWA's to below the 10 ppb level would also be effective in reducing 15-minute STELs to below the 100 ppb level. Only maintenance activities and some loading operations may require the use of a respirator by workers to achieve compliance with this STEL. The Committee, therefore concludes preliminarily that the requirements of this recommended standard are feasible.

(d) Technological Feasibility of Exposure Monitoring Provisions. The exposure monitoring provisions of the proposed recommendation would require employers to determine whether any employee may be exposed to airborne concentrations of MDA. Measurements would be made by monitoring the breathing zone of, at minimum, one representative employee over an 8-hour period for each job classification and for each shift. The Committee believes that the sampling and analytical technique currently used by OSHA is capable of sampling 10 ppb of MDA with the plus or minus 25% accuracy prescribed by the recommended standard. In addition, the methodology is capable of sampling 5 ppb which the Committee has recommended as an action level.

(e) Technological Feasibility of the Respiratory Protection Requirements. This provision would require employers to provide and ensure the use of respirators when MDA exposures exceed the alternative PELs. The proposed standard would allow employers to use respirators to achieve compliance with the PEL only in the following work situations:

- During installation of feasible engineering and work practice controls;
- Where the employer establishes that engineering and work practice controls are not feasible, such as in maintenance and repair activities, which are intermittent;
- When feasible engineering and work practice controls do not exist to reduce exposure to or below the PEL; and
- In emergencies.

Respirators must be jointly approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH). Based on the discussion of respirators posed by the Committee, there appears to be a number of respirators currently available on the market that could be used to meet this requirement.

(f) Technological Feasibility of the Protective Clothing and Equipment Provisions. This provision would require the employer to provide protective clothing and equipment when the employee is potentially exposed to MDA to prevent dermal exposure. Eye and face protection are currently required by 29 CFR 1910.133 and are easily acquired from suppliers. Other protective clothing required by the standard includes gloves, aprons, coveralls, footwear, depending on the work situation. These are also currently available on the market.

The feasibility of preventing all dermal contact is questionable and as such the Committee has rather narrowly defined what it intends by "no dermal exposure." Dermal exposure through the hands, upper forearms, upper body are strictly prohibited. A combination of aprons, coveralls, gloves, etc., can be used to achieve this provision. Dermal absorption through the face, neck, head, V of a shirt are permitted. The Committee recognized the significance of dermal exposure, but also recognized the difficulty in totally preventing exposure. It is not the Committee's position that it is more prudent to put workers in space suits than it is to allow some dermal absorption and use these assumptions to set a safe permissible exposure limit. The Committee concludes that the requirements for protective clothing are feasible.

(g) Technological Feasibility of the Medical Surveillance Provisions. The proposed provisions would require initial and periodic medical examinations for some employees who are exposed to MDA concentrations at or above the action level. The initial medical examination would include at least a detailed occupational and medical history, and a liver function test. Employees exposed to MDA in an emergency situation must be provided with a physical examination including a liver function test. Based on information provided to the Committee, the Committee believes that all of these examinations are readily available and can be performed at almost any clinic, doctor's office, or hospital.

(v) Costs of Compliance

(a) Introduction. This chapter presents estimates of the compliance costs that would be incurred by employers in the affected industry sectors subsequent to the promulgation of any of the following regulatory alternatives for MDA: Permissible exposure limit (PEL) of 20 parts per billion (0.160 mg/m^3), with an action level of 10 ppb, PEL of 10 parts per billion (0.08 mg/m^3), with an action level of 5 parts per billion; and PEL of 1 part per billion (0.008 mg/m^3) and an action level of 0.5 parts per billion. The first section of this chapter describes the rationale, the methodology and the data sources for the cost of compliance analysis. The second section provides the provision-by-provision estimates for each affected industry sector. The final section summarizes the costs of compliance. A comparison of the three alternative PELs shows that the estimated annualized cost of lowering the PEL from the current exposure levels to 20 ppb for production workers will be approximately $7.6 million. Lowering the PEL to 10 ppb will cost approximately $8.2 million. Further lowering the PEL to 1 ppb increases the annualized costs to approximately $10.2 million.

Section 1. Methodology of Cost Estimates

Overall compliance costs were developed for eleven industry sectors where MDA is found by estimating the costs of compliance for a "typical" facility in each sector. Thirteen different elements of compliance costs which would be triggered by the imposition of the recommended standard were estimated for each "typical" facility. Both capital costs and yearly operation and maintenance costs were included in the estimates. Annualized capital costs were estimated assuming that the life of the equipment would be 10 years.

Acceptable data were often unavailable to estimate the parameters which formed an element of cost compliance. The need for mandatory showers, for example, is triggered by exposure above the action level or the potential of dermal exposure, yet the number of workers meeting such criteria in a typical plant could only be roughly estimated in most sectors. To account for this type of uncertainty, the Committee consistently adopted reasonable worst-case scenarios when evaluating compliance costs.

The thirteen elements of compliance cost are: (1) Engineering controls, (2) exposure monitoring, (3) regulated areas, (4) respirators, (5) emergency planning, (6) protective clothing and equipment, (7) housekeeping, (8) hygiene facilities and practices, (9) medical surveillance, (10) employee information and training, (11) labels, (12) recordkeeping and (13) medical removal protection benefits. Exhibits 5–1 through 5–3 summarizes the data for compliance cost for each of the three PELs. Likewise, we also assumed that engineering controls would be, as in past OSHA standards, the preferred methods of achieving the PEL levels, supplemented by the use of respiratory protection only when engineering controls would not be sufficient to give the required reductions in exposure.

The cost estimates for achieving compliance with the alternative PELs were developed for 8-hour time-weighted average (TWA) exposures. Separate estimates of the costs to achieve compliance with short-term exposure levels such as 15-minute or peak exposures have not been developed for this report. As discussed previously, the Committee believes that the same engineering controls and work practices that will reduce exposures to below the 10 ppb PEL would also reduce the shorter exposures. Maintenance workers have been grouped separately from production workers. The necessary costs for respirator use in maintenance and repair situations have been identified separately from those for engineering and work practice controls which play the key role in achieving protection of production workers.

(b) Costs of Compliance for Reducing Exposures and Meeting the PEL Cost of Engineering Controls. The engineering control estimates presented in this chapter are based on industry studies conducted by ICF and responses to the Heiden survey. Information was obtained from two basic sources: Site visits by ICF provided the baseline data for the engineering estimates e.g., "glove boxes", and a mail survey commissioned by an industry trade association (Heiden Survey). As both of these sources rely on input from firms within the various industries, the data were corroborated whenever possible by using independent sources, such as equipment suppliers and engineering consultants. The cost data for engineering controls were developed for eleven industry sectors that would be most affected by an MDA standard.

Four types of engineering controls were found to be appropriate for reducing exposures to MDA in the industries examined. These are:

Size enlargement;
Pneumatic feed;
Local exhaust ventilation; and
Process enclosure.

Size enlargement, or the use of MDA granules instead of the dustier flakes, may be an appropriate control measure in those instances where solid MDA is used. The granules generate less dust during unloading into process equipment and other handling. Thermoset Plastics, a facility in the reprocessing sector, indicated a reduction in air levels of

MDA from 0.66 mg/m^3 to 0.03 mg/m^3 by converting to granules. They also reported that no changes in process equipment were necessary for the change, and that no additional cost was associated with the conversion since granulated MDA costs approximately the same as flaked MDA. Conversion costs, however, may be incurred by plants and/or processes which are different from those at Thermoset, and they may also be incurred by MDA producers to convert their systems to produce granules instead of flakes; we have not evaluated these costs.

Pneumatic feed systems are appropriate for the transfer of solid (flaked or granular) MDA in several of the affected industry sectors. A vacuum lid is placed on an open drum of MDA, a vacuum is generated and the solids are automatically drawn through a hose to the reactor vessel. The lid costs $1,400 and the vacuum source costs $1,700, for a total capital cost of $3,100. Operating costs for maintenance are 10 percent of the capital cost or $310/year, and costs for electricity will vary with the number of operating hours. Together with semi-circular hoods, these pneumatic systems should be capable of reducing air concentrations of MDA in loading and transfer areas to 10 ppb (0.08 mg/m ^{3}) or less.

Local exhaust ventilation systems for different MDA operations would likely come in one of several forms: semicircular hoods for container filling, and other types of local exhaust hooding. Semicircular hooding may be used to reduce exposures during filling operations. The hood ducts to a filter bag. For a 55-gallon size drum, the required semicircular hood costs $1,500. Operating costs include 10 percent of capital or $150/year for maintenance and $32/year for electricity to run the 1½ hp motor for 400 hours/year (operating costs will vary with the number of operating hours).

Local exhaust hooding can be placed over reaction vessels, tape machines, and molding operations to reduce MDA concentrations. The air concentration which can be reached using local ventilation is dependent upon the concentrations prior to the installation of the hood. The cost of a hood was estimated by the following equation:

(square foot of hooding)×0.6 (4 square feet) ($1,200)

Maintenance costs would be 10 percent of capital and operating costs would be $32/year for 400 hours of operation per year (operating costs vary with length of operation).

The most effective engineering control is process enclosure. This strategy is especially applicable in the MDA-for-internal use sector, where processes are nominally enclosed already. Some production systems which are "closed", however, appear to allow air concentrations of MDA greater than would be expected. The additional control method recommended in such a case would be to replace and/or maintain reactor, pipe and other seals; the Committee estimated the cost of this maintenance to be $10,000/year in the MDA production sector.

A glove box with a pneumatic feed system can be used to totally enclose the MDA unloading process in some industry segments. A one-drum system of this type costs $4500; operating costs include 10 percent of capital or $450/year for maintenance and $32/year for electricity for 400 hours of operation (varies with operating time).

The costs of engineering controls for each sector were developed by estimating the mix of above controls needed for a "typical" facility. Capital costs were annualized assuming that equipment would have a life of 10 years.

Cost of Exposure Monitoring

The exposure monitoring requirements of the recommended MDA standard would include the following elements:

All employers must perform initial monitoring, representing full-shift exposure, for each shift for each job classification in each work area where there may be employee exposures to MDA. If the employer can document that exposure levels are equivalent for similar operations in different work shifts, exposure may be determined for that operation for only one shift. If initial measurements of MDA exposure show employee exposures below the action level, monitoring for those employees may be discontinued, unless the process changes. If initial monitoring shows employee exposure above the action level but below the permissible exposure level (PEL), monitoring must be repeated at least every six months for those employees. Monitoring may be discontinued for employees for whom two consecutive measurements, taken at least seven days apart, show exposures below the action level. If initial monitoring shows employee exposure above the PEL, monitoring must be repeated at least every three months. The monitoring schedule may be changed to every six months for any employee for whom two consecutive measurements, taken at least seven days apart, indicate exposure at or below the PEL.

Costs of monitoring requirements have been estimated only for air monitoring since the Committee agreed not to require urinary monitoring. To collect personal air samples, air is drawn through a sulfuric acid treated glass fiber filter at a rate of two liters per minute using a portable sampling pump attached to the worker's belt. Eight-hour samples are taken. The samples are analyzed by high pressure liquid chromatography (HPLC).

The only capital cost is the cost of a portable sampling pump, $608. We assumed that on the average each facility would need one pump; only one employee could be monitored per day. Some companies already have the appropriate monitoring pumps, and the appropriate allowance was made for this in the estimates in each industry sector.

Some companies might not choose to buy pumps, but might instead have a contractor or insurance company carry out the required monitoring; we have not included the cost of this option in our estimates.

We assumed that samples would be analyzed by outside laboratories at a cost of $58/sample (cost of acid-treated glass fiber filters and sample cassettes for personal air samples is included with analytical costs). It is possible that large facilities might do their own analyses; we have not estimated costs for in-house analysis. In addition, there is a cost for a person to conduct the monitoring of $64/sample (2 hours of a professional worker's time at $32.00 per hour).

The Committee agreed that for the estimation of annualized costs, the average lifetime of a sampling pump is 5 years. This assumption was based on the personal experience drawn from routine use of this sampling equipment by several Committee participants.

The recommended standard would also include a cost for employee notification of monitoring results. Approximately 1 hour of secretarial time per year would be needed to type and post monitoring results and to document that exposure levels are similar for operations in different work shifts. Therefore, at an average secretarial wage of $6.62 per hour, the annual notification cost per firm would be $6.62.

In addition, the Committee estimates that dermal exposure monitoring as recommended by the standard would require 30 minutes of secretarial time per year to report findings and solutions. The average secretarial wage of $6.62 is assumed with an annual cost per firm of $3.31.

The number of job classifications for which there is potential employee exposure to MDA is used to estimate monitoring costs per facility. One employee in each affected job classification would be monitored at each facility in each industry sector, with the frequency of sampling determined by the measured MDA level. We assumed that exposure levels would be similar for the same job classifications in different shifts and, therefore, that monitoring would need to be done during only one shift. The cost estimates for each sector include the approximate number of job classifications which would be affected by monitoring requirements at each PEL in a "typical" facility. Finally, the annual monitoring costs do not reflect the first year costs, when all job classifications would have to be monitored.

Cost of Regulated Areas

This provision requires that employers establish regulated areas where exposure to MDA is likely to occur. The regulated areas and entrances to regulated areas must be demarcated with signs which limit access to authorized persons only. Signs will include a combination of phrases such as the following:

- Danger: 4,4'-Methylenedianiline.
- Regulated Area: Authorized Personnel Only.
- Protective Clothing Required.
- Wear Your Respirator.
- Goggles Must be Worn at all times.

Regulated areas are not just those areas exceeding the PEL, but also include areas where personal protective equipment is required to prevent dermal exposure to MDA. The average cost of posting a regulated area arises from the necessity of purchasing 3 signs at a cost of $8.20 per sign, and a 1,000 foot roll of caution tape at a cost of $44.84 per roll. This would make the total cost per regulated area $64.44 per firm. These would be annual costs. We have assumed that the use of regulated areas will not result in losses of productivity or other increases in production costs.

Cost of Respirators

The selection of an appropriate respirator depends upon the expected exposure level as compared to a given PEL. Three main types of respirators can be used to satisfy the requirements of the recommended standard:

<10×PEL: Half Mask Air-Purifying Respirator with HEPA cartridges ($18.38 each).

<50×PEL: Full-Face Mask Air-Purifying Respirator with HEPA Cartridge ($139.92 each).

<1000×PEL: Powered, full-facepiece Air-Purifying respirator with HEPA Cartridge ($314.00 each).

The Table recommended by the Committee has three other categories of respirator use:

<1000×PEL: Self contained breathing apparatus (pressure-demand) ($1,300 each) or full facepiece positive pressure or pressure-demand supplied-air respirator with auxilliary self-contained escape air supply (price varies depending on the source of air supply).

Escape from unknown concentrations: Any full facepiece air-purifying respirator with HEPA cartridges. ($139.92 each)

Firefighting: Full facepiece self-contained breathing apparatus in pressure demand mode.

In the Committee's view, respirator use will be restricted to the following situations:

(1) During the time period necessary to install or implement feasible engineering and work practice controls. The Committee agrees with OSHA's experience that most firms install engineering controls prior to the effective dates of the proposed regulations in order to avoid spending additional money on interim remedies (respirators). This requirement is assumed to have no cost when engineering controls are feasible.

(2) In work operations for which the employer has established that engineering and work practice controls to reduce exposure to or below the PEL are not feasible. The Committee agrees with ICF's findings that feasibility through engineering controls was achievable in all three exposure scenarios except for maintainance operators. The corresponding costs are discussed in the appropriate sections.

(3) In emergencies: The Committee did not estimate a cost for this recommendation.

The Committee decided to adopt the current OSHA practices with respect to respirator use, maintenance, etc., and not to make recommendations inconsistent with current policy. The Committee recognized that OSHA is currently revising its respiratory protection standards and thus decided to recommend that OSHA modify the respiratory protection provisions made by the Committee to achieve consistency with future revised OSHA regulations. If the MDA rule is published prior to the revision of the respirator rule, OSHA estimates that the cost-per-employee using a respirator would average $121.00 during the first year and $68.00 during the following years. If the new respiratory protection standards are promulgated before the MDA rule becomes final, the cost per employee using a respirator would increase to $242.00 during the first year and $145 during the following years. These cost estimates would cover all expenses (e.g. written procedures, inspections, cleaning and maintenance and storage of respirators). The costs of fit testing are not included in these estimates but are provided separately.

In addition to the annual cost of a respirator, the cost for HEPA cartridges at $7.84 a pair must be included. HEPA filters will be used because they provide respiratory protection against dusts, fumes, and mists with a permissible exposure limit of 0.01 mg/m^3 or less. Cartridges must be replaced as needed. Each employee exposed to concentrations greater than the PEL will have his/her own respirator.

There would be no cost associated with a recommended provision for washing the face and adjusting the respirator if workers are currently required to wear respiratory protection, since the costs of allowing employees to wash faces are already required under 1910.134. However, if workers are required to wear respirators as a result of this proposed regulation the associated costs would include: 2 times a day (5 minutes each) of lost work time at an hourly compensation rate of $11.43 or $1.90 per hour per worker per day required to wear a respirator.

The Committee recommends a requirement for initial and annual fit testing. Qualitative or quantitative fit testing would be acceptable provided the protocol outlined in Appendix E is used.

A 1986 report on respiratory fit testing indicates that qualitative fit testing is the method most employers will choose. OSHA has estimated that 30 minutes of lost work time will be required for each employee tested. In addition, 1.25 hours of instructors time will be required. The estimated compensation for an instructor will be $16.00 per hour and that of a production worker would be $11.43 per hour. The total cost per session per employee would be $25.72 per worker fit tested. This would be the cost of the initial fit test and the annual fit test. These estimates do not include any costs for additional tests which may be required.

Cost of Emergency Planning

The Committee recommends that a written plan for emergency situations be required for each workplace. This plan should meet the requirements specified under 29 CFR 1910.38 "Employee Emergency Plans and Fire Prevention Plans." Facilities already covered by 29 CFR 1910.38 should have such plans in effect. Facilities manufacturing, using, or otherwise handling MDA will incur costs in preparing an MDA-specific addendum to the current emergency plan. We estimate that two hours of supervisory time at $32/hour would be necessary to develop this addendum to the emergency plan, and one hour of clerical time at $6.62/hr would be needed to type up the addendum. This addition to the emergency plan would be presented to the employees as part of the already required information and training program. The total cost for emergency planning is $71.00 per facility for the first year. Following year costs for updating are estimated to be one-half the first year costs.

The Committee also recommends the requirement that employees engaged in emergencies have the appropriate personal protective equipment and clothing. We assumed no costs for this provision because it is already required by section 1910.38. The Committee also recommends that a means of alerting employees during emergencies be provided. There are no estimated costs for this provision since it is already required in section, 1910.38.

Cost of Protective Clothing and Equipment

Two sets of personal protective equipment have been defined which, in the Committee's judgment, would be used by firms if an OSHA standard were proposed requiring the prevention of most dermal exposures resulting from direct contact with MDA except for particulates, gases, or vapors. Each employee potentially exposed to MDA would have to be supplied this equipment for each day MDA is handled. The costs for protective clothing and equipment were estimated from the sets of equipment described below and combined with estimates of required usage for a typical facility in each industry sector. The cost of typical equipment already provided in each sector was subtracted from the total estimate. The two sets of protective clothing, and the requirements for their use, are as follows:

(1) Workers exposed to liquid mixtures of MDA or to concentrations of dusts or vapors between the action level and the PEL:

Work coveralls
PVC or natural latex gloves (changed every two hours)
PVC or latex apron (changed daily)
PVC or latex shoe covers (changed daily)
Chemical splash goggles (annually)

(2) Workers exposed to concentrations of dusts or vapors above the PEL:

PVC or latex gloves (changed every two hours)
PVC or latex shoe covers (changed daily)
Chemical splash goggles (annually)
Polyethylene-coated Tyvek disposable coveralls with attached hood, boots, and elastic wrists (changed daily)

The Committee recommends specific requirements for in-house or off-site laundering of MDA contaminated clothing. Additional costs are not expected for these sections since most of the firms reporting in the Heiden survey already provided regular work clothing and laundering. The only additional cost imposed by the laundering requirement involves the labelling of containers with contaminated clothing. Labels are estimated to cost approximately $0.33 each, and the Committee assumes that a firm will need to label an average of 5 containers per week (3 in the regulated areas and 2 in the change rooms), for an average weekly cost of $1.65/facility. There are no other labelling costs in that these costs would be attributable to the Hazard Communication standards.

Cost of Housekeeping

The Committee recommends a requirement that all surfaces be maintained as free as practicable of visible accumulations of MDA capable of becoming airborne and/or otherwise resulting in airborne or dermal worker exposure.

Several measures would likely be required to comply with the housekeeping requirements. Initially, and annually after that, each establishment would need to carry out a thorough clean up of MDA work areas. One day of work at $11.45/hr (91.60/day) per 10 MDA employees in a facility is the cost estimate for this measure. In addition, we assume the use of disposable 4 mil polyethylene or an equivalent disposable material to cover work and floor surfaces where solid or liquid MDA may be spilled during transfer, packaging and other operations. To estimate the cost, we assume five square yards per MDA employee per day, at $0.21 sq. yard. The removal, disposal and labelling of contaminated polyethylene would entail one-half an hour per MDA day of work at $11.45 per hour, or $5.72/MDA day. Housekeeping requirements would also call for a program for detecting MDA leaks, spills, and discharges, including regular visual inspections of operations involving liquid or solid MDA. The Committee estimates that an additional one-half hour of supervisor's time per MDA day of work (at $16/hr.) will be adequate to maintain general cleanliness and inspect for leaks and spills in accordance with this language. The annual cost per firm would be $416 or $8 per week for 52 weeks.

The recommended standard would also require that all leaks be repaired and liquid or dust spills cleaned up promptly. The cost can be estimated by assuming one-half an hour per MDA day of work at $11.45/hr per plant, or $5.72/MDA day.

The recommendations would prohibit the use of compressed air to clean surfaces contaminated with MDA but there is no indication that this is a current practice in any of the industries surveyed. No costs of compliance are estimated for this requirement.

The recommended language requires the use of HEPA filter vacuum or wet clean-up to pick up spills. The cost estimate includes a portable HEPA vacuums whenever solid MDA is handled outside of a totally enclosed process, at a capital cost of $1,102.94.

Finally, the recommended language for waste disposal is consistent with the requirements in 29 CFR 1910.141 and as such no costs of compliance are estimated.

Cost of Hygiene Facilities and Practices

The recommended standard requires change rooms with separate storage for work and street clothing. This is already required by 1910.141 provided the employer supplies protective clothing or equipment. ICF found that all the employers surveyed were already in compliance with this provision. The Committee believes this to be correct, in that most of the work places handle a variety of toxic substances which require the use of personal protective equipment and thus proper change rooms.

The recommendations require that employees exposed above the action level to dusts or vapors of MDA shower at the end of the work shift.

Both capital and operating and maintenance (O&M) costs could be incurred for shower facilities. Capital costs for showers are based on 1 shower per 10 people of the same sex, specified under 29 CFR 1910.141, and are calculated as follows:

$$\text{costs} = (\text{number of showers})^{0.4} \times \$5{,}000$$

Operation and maintenance are estimated on the basis of one-half hour/day paid time for a mandatory shower at the end of the work shift. Based on an average wage of $11.43/hour, the cost for mandatory showers is $5.72/employee for each day of MDA operation. Most facilities provide showers, but showers are not typically mandatory.

Shower facilities would have to comply with 1910.141(d)(3) which requires soap, hot and cold running water, towels, and an attendant. Both ICF and the Heiden survey reported that most of the firms surveyed had shower facilities. The cost estimates include capital costs for those few instances where the available information suggested that no showers were available. It is also assumed that the costs to operate a shower would be $0.68/shower/worker per 6 minute shower based on an estimated water usage of 20 gallons/shower at 90 °F.

The Committee also assumed that the existing employee training program could be used to inform the employees of the mandatory shower requirement. Costs providing for a shower attendant where not calculated for those firms with existing showers, since they would already have to be in compliance with 1910.141. The recommendations would require employees who must shower and remove protective clothing and equipment before leaving the workplace. No additional costs will be incurred as a result of this requirement since additional time to perform this task has been allowed in the time necessary to take a shower.

The recommendations would require that employees exposed to any spills of MDA remove spilled material from skin immediately. The Committee estimates that approximately 5 minutes is needed to thoroughly wash after a spill. Based on an average employee wage of $11.43, the estimated cost for time lost would be $0.95 per washing. The Committee also estimates that approximately 1 spill per month will occur (12 times annually). Therefore, this provision will cost an estimated $11.43 per employee per year.

Whenever food or beverages are consumed at the worksite and employees are exposed to MDA, the recommendations would require that the employer provide lunch areas were MDA levels are below the action level and where eating surfaces are free of MDA accumulations. See 1910.141 already prohibits the consumption of food or beverages in any area exposed to a toxic substance. In addition, it is reasonable to assume that most facilities handling MDA have separate lunch rooms or other provisions for consumption of meals in non MDA areas. This assumption is greatly aided by the limited nature of most MDA operations. Very few plants are entirely dedicated to MDA use; often processes with potential MDA exposure are limited to one portion of a facility. For these reasons, no additional costs were estimated for the provision regarding clean lunch areas in any industry sector.

The recommendations would require that the employees wash their hands and faces with soap and water prior to eating, drinking, smoking, or applying cosmetics. For cost purposes, it was assumed that employees would wash their hands and faces an estimated three times a day for an average of 2 minutes per break. Based on an average employee wage of $11.43 per hour, the estimated cost per worker for each day of MDA work will be $1.14.

The recommendations would require that employees be prohibited from entering lunch facilities with contaminated protective work clothing or equipment. The Committee estimates that 5 minutes per day would be ample time to comply with the language of this requirement. Therefore, based on an average employee wage of $11.43, the cost of this provision would be $0.95 per worker per day of MDA work.

Cost of Medical Surveillance

The recommendations would require that medical surveillance be provided to all employees exposed to MDA at or above the action level, to all employees exposed more than 15 days per year dermally, and to all employees exposed in an emergency situation or showing signs or symptoms of exposure to MDA.

For costing purposes, the Committee made the conservative assumption that all the workers in every industry sector would be potentially subject to dermal exposure 15 days/year or more, and thus subject to medical surveillance requirements. These conservative cost estimates were adjusted only to the extent that the data in the Heiden survey indicated that surveillance was already conducted in a particular sector.

In addition, the Committee also estimated that one out of every 1,000 workers would require additional medical surveillance under the emergency provision of the recommended standard; and that an additional one out of 1,000 workers would require an examination because of signs or symptoms of exposure to MDA.

The initial physical examination is a one-time, non-recurring event for all individuals beginning work in an MDA area at the facility. The annual and emergency examinations would be comparable in content. These procedures would require a general examination that includes a detailed occupational history, skin examination, liver function test and urinalysis. The examination would cost $70/worker. Liver function tests would cost $15.00 per worker and urinalysis testing would cost $7.50 per worker. Since most MDA facilities are relatively small and do not have health care facilities, cost estimates were prepared assuming that workers would visit a medical facility away from the company. Employee travel time and exam time were estimated to total two hours; lost worktime costs associated with medical surveillance were thus estimated to be $22.86/worker. The total cost of all these components of an examination would be $115.36/worker.

The Committee further assumed that a multiple physician review mechanism would be triggered by emergency MDA exposures or the observation of signs or symptoms of MDA exposure, and the cost of an additional examination by a second physician has been estimated for 1 out of every 1,000 workers.

The recommendations would require that certain information be provided to the physician. The clerical time to collect the information and develop the necessary paper work was estimated to be one-tenth of an hour of clerical time at $6.62 per hour, or $0.62/exam.

The cost of the physician developing his written opinion has been included in the cost of a medical examination. Additional clerical time to receive the physician's written opinion, and transmit the results to the appropriate individuals, make copies, file etc. are assumed to require one-tenth of an hour of clerical time at $6.62/hour, or $0.62/exam.

Throughout this analysis, costs have been estimated based on the assumption that firms will comply fully with the proposed rule. For example, costs have been calculated assuming that all workers exposed to MDA will wash their hands several times a day to ensure cleanliness prior to eating, smoking, or applying cosmetics; workers will always wear the proper protective equipment, and good housekeeping techniques will prevail throughout. For analytical purposes, therefore, the costs of the medical removal provision will be calculated based on the potential for needing to remove workers when firms comply fully.

It is the opinion of OSHA that the costs of this provision will be negligible for those firms complying fully with the proposed standard. If the other provisions of the rule (engineering controls, personal protective equipment, proper emergency procedures, good worker and plant hygiene methods, worker training, etc.) are complied with, workers will rarely, if ever, be exposed to excessive amounts of MDA or show symptoms associated with acute exposure to MDA. In fact, the very existence of a medical removal provision should result in fewer dangerous exposures. The provision creates an economic incentive for employers to provide safe workplaces since firms must either absorb the costs of complying or endure the consequential costs of over exposing an employee. In the past, there was often no economic cost of unduly exposing an employee to MDA.

Careful compliance with the rule therefore, should result in the needed removal of very few employees. The potential for emergencies with MDA is relatively low since MDA is typically used in very small, controlled operations where sudden accidents are unlikely. It was assumed that one worker per 1,000 workers exposed to MDA may be involved in an MDA emergency each year. The Committee estimates, on the average, that this worker may need to be removed from the workplace for one month, resulting in a loss of worker productivity of $1830 (20 workdays × 8 hour days × $11.43 average employee wage). After the one month period it was assumed that the worker could return to his/her position or be transferred to a new position at no additional cost.

Costs of Employee Information and Training

The recommended standard for MDA requires include a requirement that employers provide employees potentially exposed to MDA with information and training on the hazards of MDA and appropriate handling procedures. The training would be provided at the time of initial assignment and at least annually thereafter. Information provided would include the following:

- An explanation of the content of the proposed standard;
- Briefings about the operations where MDA is present;
- An explanation of the medical surveillance program;
- Methods that may be used to detect MDA in the work area;
- The physical and health hazards of MDA;
- The measures that employees can use to protect themselves from hazards associated with MDA exposure, including specific measures implemented by the employer; and
- An explanation of the labeling system and how employees can obtain and use the appropriate hazard information

The Hazard Communication standard already requires firms to provide employees with "information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new hazard is introduced into their work area [29 CFR 1910.1200(h)]. Thus as training is already required under the Hazard Communication rule, the Committee's estimates do not include costs for the first year of training. Most facilities will have an existing training program, but we assumed that this program would not include all the required information about MDA. The cost of employee information and training would be those of adding an MDA component to the training program and of presenting the program annually. These costs would include: (1) The labor cost for a supervisor to add an MDA component to the training program (estimated time: 8 hours); (2) The labor costs for a clerical person to add an MDA component to the training program (estimated time: 30 minutes per facility); (3) The cost of an employee attending the training (one half-hour of employee time per year at an hourly wage of $11.43 per hour, or $5.72 per employee per year); (4) An annual supervisory cost of $24 per supervisor, based on three half-hour presentations per year (one presentation for each shift) at an hourly wage of $16 per hour.

The recommended standard requires that companies manufacturing packaged products containing unreacted MDA apply labels to these products indicating the presence of MDA. Labels should include phrases such as:

- Caution: Contains 4,4'-Methylenedianiline.
- Cancer Hazard.
- Personal Protective Equipment Required.

Labels would be applied to containers prior to shipment from both manufacturers and reprocessors of MDA containing products and one label would be required per drum. These costs, however would be attributable to the Hazard Communication Standard.

Costs of Recordkeeping

The Committee assumes that recordkeeping requirements for a standard regulating MDA will be similar to those for other occupational carcinogens. Estimated costs are based on the need to keep records for 30 years and the following assumptions: Records will be maintained in hardcopy form; the average duration of employment will be 10 years during which records will need to be readily accessible (e.g., in file cabinets); after 10 years have passed, records will be moved to a secure storage area in boxes (it is assumed that these exist for other personnel records); and all recordkeeping will be done in-house.

The costs of recordkeeping are therefore estimated as follows:

- File cabinets, 4-drawer legal size (steelcase model 1700 with locks)—list price $418.
- Floor space required for the file cabinet—2 square feet at $45 per square foot, or $90 per facility.
- File maintenance will be taken care of by a file clerk in addition to his/her normal duties—one hour of clerical work at $6.62/hour.
- Long—term storage of records with other company records—no cost.

Total capital cost is $508 per facility, and total operating cost is $6.62/year.

Cost of Substitution for MDA

The information gathered by ICF suggested that substitution for MDA was technologically feasible in four of the industry sectors they examined, although the estimated cost of substitution was not always lower than the cost of compliance by other means. The Heiden survey, on the other hand, reports that substitution would not be a feasible compliance alternative in any industry sector. The Committee has concluded that substitution is not a viable alternative in any industry sector, and thus no cost estimates were made for possible substitution in any sector.

(*c*) Cost Estimates by Industry Sector. The following sections summarize the estimated costs for meeting the three alternative PELs considered by the Committee [PEL 1: 20 ppb (0.160 mg/m^3), PEL 2: 10 ppb (0.08 mg/m^3), PEL 3: 1 ppb (0.008 mg/m^3)] in each of the eleven industry sectors the Committee was able to examine. Substitution costs are not discussed for each sector because the Committee concluded that there are no substitutes available for MDI or PACM-20 production, or for the downstream products which use manufactured or imported MDA. A number of the industries are already meeting some of the PELs, according to the data available to the Committee, and in some instances costs remain constant from one PEL to another, because the costs of engineering and other controls necessary to meet one PEL are the same as the costs to meet more strict PELs.

MDA Production for MDI Synthesis; MDA Sale/Import

The total annualized average compliance cost per facility in this industry is estimated to be $156,547 for PEL 1, $224,299 for PEL 2, and $289,721 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls for MDA/MDI Production/Sale/Import

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this industry were estimated to be currently $<0.33\ mg/m^3$ (41 ppb) in the MDA production and the flaking packaging areas, and $<0.01\ mg/m^3$ (1 ppb) in the MDA conversion areas.

The engineering controls necessary to reduce the exposures to 20 ppb and 10 ppb are the same. These controls are:

—Maintenance on seals for MDA production vessels and piping at an annual cost of 10 percent of capital cost (assumed to be $100,000) or $10,000 per year

—Enclosure of the flaking cylinder by use of the existing plexiglass covers (no cost)

—A semicircular hood for drum filling and weighing, with an estimated capital cost of $1,500 (annualized to $243) and maintenance and operation costs of $310 (maintenance: 10% of capital; operation: electricity for 2,000 hours of operation)

The total annualized engineering control cost for PELs 1 and 2 would thus be $10,796 per facility.

The engineering controls necessary to reach PEL 3 would be more extensive and costly. In addition to the same seal and piping maintenance as in the other two PELs (at 10,000 per year), a typical plant in this sector would have to install:

—Two local ventilation hoods, one over each process vessel, at an estimated capital cost of $6,333 per hood (For two hoods, the annualized amount would be $2,052; the maintenance costs would be 10% of capital or $1,267; and the operating costs would be $960.)

—A complete enclosure of the flaking-packaging operation at an estimated capital cost of $50,000 (annualized to $8,100), with an operation and maintenance cost of $310. The total annualized engineering control costs for PEL 3 would be an estimated $22,930

Exposure Monitoring

The Committee assumed that all facilities in this sector already have monitoring pumps. No air monitoring beyond the first year would be required at PEL 1 because engineering controls would reduce the exposures of all production workers under the action level for this PEL. The only annual costs would be a clerical notification cost (6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility).

The same clerical and dermal monitoring costs would be incurred in PELs 2 and 3. In addition, in PEL 2, three job classifications would have to be monitored twice a year, and in PEL 3, five classifications would have to be monitored twice a year. The cost of monitoring each job classification would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $742/year for PEL 2 and $1,230/year for PEL 3.

Regulated Areas

The MDA manufacturing and converting area, the packaging area, and the laboratory will be regulated areas under all three PELs. At a cost of $64.44 per area, the total annual cost per facility would be $193.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.31 per facility.

Protective Clothing and Equipment

The protective clothing ensemble which would be required by the Committee's recommended standard, as described in Section 2 above (Methodology of Cost Estimates), would cost $86,962 for a typical facility of 75 workers. The cost would not vary between PELs. The data from the Heiden survey, on the other hand, suggest that facilities in this industry already provide their workers with coveralls, butyl gloves and boots, and splash goggles. For a typical facility of 75 workers, the total cost of providing such personal protective equipment is currently $5,164/year. The incremental cost imposed by the recommended standard would therefore be $81,799.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section One (Methodology), an annual thorough clean-up, the use of plastic for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum. For this sector, the Committee assumed that all these sectors would be incremental, for a yearly total of $22,402 per facility, with the greatest portion coming from the cost of using disposable plastic or the equivalent to collect spills around MDA operations.

Hygiene Facilities and Practices

The Heiden survey indicates that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of washing after spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates).

The annual costs of hygiene facilities and practices in this sector for PEL 1 would be $40,224; for PEL 2, $107,244; and for PEL 3, $160,044. The costs increase because at each level there would be a larger number of workers at or above the action level and thus required to take showers.

Medical Surveillance

Based on the data from the Heiden survey, the Committee assumed that all workers in this industry already receive initial and yearly medical examinations. The only incremental cost the Committee estimated was the inclusion of liver function exams which are not now provided to 25% of the work force, and the clerical time required for the required paperwork. These incremental costs would amount to $380 yearly per facility.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $146/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $472 annually per facility.

Labels

The Committee assumed that all labelling costs would be properly counted under the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

MDA Reprocessing

The total average annualized compliance cost per facility in this industry is estimated to be $10,256 for PEL 1, $11,618 for PEL 2, and $17,335 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this industry were estimated to be <0.160 mg/m^3 (20 ppb) in the MDA blending and reacting areas, <0.08 mg/m^3 in the packaging areas, and <0.01 mg/m^3 in the packaging, receiving, warehouse, laboratory and shipping areas.

The use of granular instead of flake MDA has been reported to be a successful control method in at least one of the plants studied by ICF, where the levels could be brought below PEL 2 (10 ppb) by such a change, without any additional costs. However, the Committee concluded that such a shift in the form of the raw material would not be generally applicable to the industry.

The engineering controls which the Committee assumed necessary to reduce the exposures to 20 ppb and 10 ppb are the same. These controls are:

—A semi-circular or equivalent hood and pneumatic feed system for the blending, reacting and packaging areas. The hood would have a capital cost of $1,500 (annualized cost $243) and an operation and maintenance cost of $166 (maintenance plus electricity). The pneumatic feed system would cost $3,100 (annualized cost $502) and operation and maintenance costs of $635

The total annualized cost for achieving PELs 1 and 2 would be $1,547. To achieve PEL 3, these facilities would require the above controls together with the use of a glove box for handling of solid MDA. The total annualized cost per facility with this additional control would be $1,614.

Exposure Monitoring

The Committee assumed that all facilities in this sector would have to purchase monitoring pumps ($608 each). At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). One job classification would have to be monitored twice a year in PEL 1; two would be monitored in PEL 2; and five classifications would have to be similarly monitored for PEL 3. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $419/year for PELs 1 $648 for PEL 2, and $1,389/year for PEL 3, including the annualized cost of the pump.

Regulated Areas

The MDA receiving/packaging, production and laboratory areas, will all be regulated areas. At a cost of $64.44 per area, the total annual cost per facility would be $193.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.50 per facility.

Protective Clothing and Equipment

The protective clothing ensemble which would be required by the Committee's recommended standard, as described in Part 2 above (Methodology of Cost Estimates), would cost $4,988 for a typical facility of 18 workers. The data from the Heiden survey, on the other hand, suggest that facilities in this industry already provide their workers with different combinations (depending on the work area) of coveralls, gloves, splash goggles, aprons, and disposable tyvek suits. For a typical facility of 18 workers, the total current cost of providing such personal protective equipment is currently $3,423/year. The incremental cost imposed by the recommended standard would therefore be $1,565.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section One (Methodology), an annual thorough clean-up, the use of plastic for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum.

For this sector, the Committee assumed that all these costs would be incremental, for a yearly total of $2,213 per facility, with the greatest portion coming from the cost of using plastic or the equivalent to collect spills around MDA operations.

Hygiene Facilities and Practices

The Heiden survey indicates that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates).

The annual costs of hygiene facilities and practices in this sector for PEL 1 would be $3,181; for PEL 2, $4,314; and for PEL 3, $9,223. The costs increase because at each level there would be a larger number of workers at or above the action level and thus required to take daily showers.

Medical Surveillance

Based on the data from the Heiden survey, the Committee assumed that 60% of all workers in this industry already receive initial and yearly medical examinations, so that the incremental costs the Committee estimated were for the remainder of the workforce, for a total of $808. There would also be some clerical time required for the required paperwork. These incremental costs would amount to $832 yearly per facility.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $35/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $146 annually per facility.

Labels

The Committee assumed that all labelling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

Filament Winding

The total average annualized compliance cost per facility in this industry is estimated to be $83,382 for PEL 1, $84,674 for PEL 2, and $88,221 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this industry were estimated to be <0.160 mg/m ^{3} (20 ppb) in the resin mixing, filament impregnation, and winding head areas, and <0.08 mg/m ^{3} (10 ppb) in the laboratory areas.

Since all the production workers are currently at levels <20 ppb, there would be no costs to achieve this PEL. To achieve PEL 2, the Committee estimates that it would be necessary to install a pneumatic transfer system for solid MDA, as discussed in the Reprocessing sector. The annualized total cost would be $1,292.

To achieve PEL 3, it would be necessary to install the pneumatic feed system with a glove box for solid MDA transfer, as described in the Reprocessing sector, as well as ventilation hoods over the tape machine and winding head. The first control would have an estimated annual cost of $1,659; and the two ventilation hoods would cost $8,537 (annualized to $1,383), with an operation cost of $1,796. The total annualized cost for PEL 3 would be $4,838.

Exposure Monitoring

Based on the Heiden survey data, the Committee assumed that 25% of the establishments already monitor MDA in a manner that would satisfy the recommended standard. At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). Four job classifications would have to be monitored twice a year in all three PELs. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $1,042 in annual monitoring costs for all PELs, including some annualized costs for purchase of monitoring pumps.

Regulated Areas

The regulated areas will be the mixing, impregnation, winding head and oven areas. At a cost of $64.44 per area, the total annual cost per facility would be $258.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.50 per facility.

Protective Clothing and Equipment

The protective clothing ensemble which would be required by the Committee's recommended standard, as described in part 2 above (Methodology of Cost Estimates), would cost $25,291 for a typical facility of 25 workers. None of the data available to the Committee indicated any current expenditures in protective equipment in this industry; therefore, the cost imposed by the recommended standard would be the full amount of the required ensemble for all workers, or $25,291.

Housekeeping

For this sector, the Committee assumed that all these costs would be incremental, for a yearly total of $7,568 per facility, with the greatest portion coming from the cost of using plastic or the equivalent to collect spills around MDA operations.

Hygiene Facilities and Practices

The Heiden survey indicates that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates).

The annual costs of hygiene facilities and practices in this sector for all three PELs would be $46,557.

Medical Surveillance

Based on the data from the Heiden survey, the Committee assumed that 25% of all workers in this industry already receive initial and yearly medical examinations, so that the incremental costs the Committee estimated were for the remainder of the workforce, for a total of $2,192. There would also be some clerical time required for the required paperwork. These incremental costs would amount to $2,217 yearly per facility.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $49/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $186 annually per facility.

Labels

The Committee assumed that all labelling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $70 per facility.

Potting and Encapsulation

The total average annualized compliance cost per facility in this industry is estimated to be $21,826 for PELs 1 and 2, and $26,889 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure profile), worst-case exposure levels in this industry were estimated to be ≤0.08 mg/m ^{3} (10 ppb) in the resin mixings and blending areas, and ≤0.0008 mg/m ^{3} (0.1 ppb) in the curing areas.

Facilities in this industry already comply with PELs 1 and 2 and thus they would incur no engineering control costs. In order to comply with PEL 3 (1 ppb), the typical facility would have to install a metered feed system for liquid MDA which would cost $15,000 (annualized cost $2,430), and a local exhaust system which would be a 4 x 4 foot hood with a capital cost of $2,757 (annualized cost $447). Including operation and maintenance, the annual costs of the controls needed to achieve PEL 3 (1 ppb) would be $4,819.

Exposure Monitoring

The Committee assumed that all facilities have monitoring pumps available. All three PELs would have a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). One job classification would have to be monitored twice a year in PELs 1 and 2, and four classification would have to be similarly monitored for PEL 3.

The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $254/year for PELs 1 and 2, and 498/year for PEL 3.

Regulated Areas

The MDA mixing/preform and quality control laboratory areas will be regulated areas. At a cost of $64.44 per area, the total annual cost per facility would be $129.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no estimated costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.50 per facility.

Protective Clothing and Equipment

The protective clothing ensemble which would be required by the Committee's recommended standard, as described in part 2 above (Methodology of Cost Estimates), would cost $6,402/year for a typical facility of 19 workers. The data from the Heiden Survey, on the other hand, suggests that facilities in this industry already provide their workers with safety glasses and cotton gloves. For a typical facility of 9 workers, the total current cost of providing such personal protective equipment is $146/year. The incremental cost imposed by the recommended standard would therefore be $6,256.

Housekeeping

For this sector, the Committee assumed that all these costs would be incremental, for a yearly total of $3,009 per facility, with the greatest portion coming from the cost of using plastic or the equivalent to collect spills around MDA operations.

Hygiene Facilities and Practices

The Heiden survey indicates that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates).

The annual costs of hygiene facilities and practices in this sector for all PELs would be $11,794.

Medical Surveillance

Based on the data from the Heiden survey, the Committee assumed that all workers in this industry already receive initial and yearly medical examinations. The only incremental cost the Committee estimated was for the cost of liver function tests, which are not now part of the medical examinations. There would also be some clerical time required for the required paperwork. These incremental costs would amount to $147/yearly per facility.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $17/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $95 annually per facility.

Labels

The Committee assumed that all labelling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

Molding and Bonding

The total average annualized compliance cost per facility in this industry is estimated to be $24,052 for PELs 1 and 2, and $30,493 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this industry were estimated to be $\leq$0.08 mg/m ^{3} (10 ppb) in the resin mixing and blending areas, $\leq$0.008 mg/m ^{3} (1 ppb) in the liquid resin transfer and packaging areas, and $\leq$0.0008 mg/m ^{3} (0.1 ppb) in the curing areas.

Since all workers are already at or below 10 ppb, there would be no engineering costs to achieve PELs 1 or 2. To achieve PEL 3, the Committee estimates that it would be necessary for a typical facility to install a metered feed system and a local exhaust system in the mixing and blending areas. A closed metered system for liquid MDA would cost $15,000 (annualized cost $2,430); the local exhaust system would be a 4 x 4 foot hood with a capital cost of $2,757 (annualized cost $447). Including operation and maintenance, the annual costs of controls needed to achieve PEL 3 would be $6,196.

Exposure Monitoring

Based on the data from the Heiden survey, the Committee assumed that the two establishments in this sector would have to purchase the required monitoring pumps. At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). One job classification would have to be monitored at PELs 1 and 2, and two job classifications for PEL 3. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $413 in annual monitoring costs in PELs 1 and 2 and $658 for PEL 3, including the annualized cost of the monitoring pump.

Regulated Areas

Facilities in this sector would have two regulated areas per establishment, at an annual cost of $129.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no estimated costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.50 per facility.

Protective Clothing and Equipment

The protective clothing ensemble which would be required by the Committee's recommended standard, as described in Section 2 above (Methodology of Cost Estimates), would cost $6,984 for a typical facility of 9 workers. The data available to the Committee indicated that the facilities in this sector currently provide their workers with safety glasses and cotton gloves, at a yearly cost of $146. Therefore, the incremental cost imposed by the recommended standard would be $6,838.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section 1 (Methodology) an annual thorough clean-up, the use of plastic or the equivalent for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum.

For this sector, the Committee assumed that all these costs would be incremental, for a yearly total of $3,221 per facility, with the greatest portion coming from the cost of using plastic to collect spills around MDA operations.

Hygiene Facilities and Practices

The Committee assumed that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section 1 above (Methodology of Cost Estimates). The annual costs of hygiene facilities and practices in this sector for all PEL would be $12,863 per facility.

Medical Surveillance

Based on the data from the Heiden survey, the Committee assumed that 60% of all workers in this industry already receive initial and yearly medical examinations, so that the incremental costs the Committee estimated were for the remainder of the workforce, for a total of $346 per facility. There would also be some clerical time required for the required paperwork. These incremental costs would amount to $350 yearly per facility.

Medical Removal

Using the assumptions described in Section 1 above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $17/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the Methodology section, these costs would add up to $70 annually per facility.

Labels

The Committee assumed that all labelling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

Advanced Composite Materials Production

The total average annualized compliance cost per facility in this industry is estimated to be $17,505 for PEL 1, $17,905 for PEL 2, and $35,077 tor PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this industry were estimated to be $<$0.160 mg/m ^{3} (20 ppb) in the resin mixing and laboratory areas, and $<$0.08 mg/m ^{3} (10 ppb) in the pre-preg areas. The industry is currently in compliance with PEL 1 (20 ppb) and thus no costs are estimated to reach this level. The Committee also concluded that better use of existing controls could achieve a PEL of 10 ppb. To achieve PEL 3, the Committee estimated that a glove box with a pneumatic feed system and local exhaust ventilation over the PMR-15 production vessels would be needed. The glove box/pneumatic feed system would cost $4,500 (annualized cost $729) with yearly operation and maintenance costs of $473. The local exhaust hood would cost $6,334 (annualized cost $1,026) with an operation and maintenance cost of $656. The total annualized cost of engineering controls to achieve PEL 3 would be $2,885.

Exposure Monitoring

Based on the Heiden survey data, the Committee estimated that one-half of the facilities in this sector would have to purchase sampling pumps ($608 each). At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). One job classification would have to be monitored twice a year in PEL 1 and 2, and four classifications would have to be similarly monitored for PEL 3. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $325/year for PELs 1 and 2, and $1,066/year for PEL 3.

Regulated Areas

The MDA mixing, the pre-preg and the laboratory areas, will be regulated areas. At a cost of $64.44 per area, the total annual cost per facility would be $193.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no estimated costs for the required use of respirators above the PEL.

Emergency planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.50 per facility.

Protective Clothing and Equipment

The protective clothing ensemble which would be required by the Committee's recommended standard, as described in Part 2 above (Methodology of Cost Estimates), would cost $9,531 for a typical facility of 43 workers. The data from the Heiden survey, on the other hand, suggests that facilities in this industry already provide their workers with different combinations (depending on the work area) of coveralls, gloves, splash goggles, and disposable tyvek suits. For a typical facility of 43 workers, the total current cost of providing such personal protective equipment is currently $3,061/year. The incremental cost imposed by the recommended standard would therefore be $6,470.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section 1 (Methodology) an annual thorough clean-up, the use of plastic or the equivalent for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum.

For this sector, the Committee assumed that all these costs would be incremental, for a yearly total of $3,078 per facility, with the greatest portion coming from the cost of using plastic or the equivalent to collect spills around MDA operations.

Hygiene Facilities and Practices

The Heiden survey indicates that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates).

The annual costs of hygiene facilities and practices in this sector for PELs 1 and 2 would be $6,330 and for PEL 3, $17,158. The costs increase because PEL 3 there would be larger number of workers at or above the action level and thus required to take daily showers.

Medical Surveillance

Based on the data from the Heiden survey, the Committee assumed that 25% of all workers in this industry already receive initial and yearly medical examinations, so that the incremental costs the Committee estimated were for the remainder of the workforce, for a total of $1,730 per facility. There would also be some clerical time required for the required paperwork. These incremental costs would amount to $1,750 yearly per facility.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $39/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $289 annually per facility.

Labels

The Committee assumed that all labeling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $70 per facility.

Polyurethane Curing

The total average annualized compliance cost per facility in this industry is estimated to be $10,879 for PEL 1, $11,768 for PELs 2 and 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure profile), worstcase exposure levels in this industry were estimated to be <0.160 mg/m^3 20 ppb) for all workers.

Facilities in this industry already comply with PEL 1. To achieve compliance with PELs 2 and 3 the same engineering controls would be needed, namely a local exhaust ventilation upgrade over the molding operations. The required 4x4 foot hood would cost $2,757 (annualized cost $447) with operation and maintenance costs of $442. The total annualized costs to comply with PELs 2 and 3 would thus be $889.

Exposure Monitoring

The Committee assumed that all facilities in this sector would have to buy a monitoring pump (capital cost $608). At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). Three job classifications would have to be monitored twice a year in all PELs. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $902/year, including the annualized cost of the pumps.

Regulated Areas

The casting/molding and the laboratory areas will be regulated areas. At a cost of $64.44 per area, the total annual cost per facility would be $129.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no estimated costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.50 per facility.

Protective Clothing and Equipment

The protective clothing and equipment which would be required by the Committee's recommended standard, as described in Part 2 above (Methodology of Cost Estimates), would cost $1,994 for a typical facility of 3 workers. The data from the Heiden survey, on the other hand, suggest that facilities in this industry already provide their workers with coveralls, gloves, splash goggles, and disposable tyvek suits. For a typical facility of 3 workers, the total current cost of providing such personal protective equipment is $3,574/year. There would thus be no incremental cost imposed by the recommended standard.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section One (Methodology) an annual thorough clean-up, the use of plastic or the equivalent for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum.

For this sector, the Committee assumed that all these costs would be incremental, for a yearly total of $2,906 per facility, with the greatest portion coming from the cost of cleaning up spills around MDA operations.

Hygiene Facilities and Practices

The Committee assumed that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates).

The annual costs of hygiene facilities and practices in this sector for all PELs were estimated as $6,402.

Medical Surveillance

The Committee assumed that none of the workers in this industry sector currently received initial or yearly medical exams. The cost to provide them yearly would amount to $346/per facility. There would also be a clerical cost of $4.00, for a total annual cost of $350.00.

Medical Removal

Using the assumptions described in Section One above (methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $66/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $61 annually per facility.

Labels

The Committee assumed that all labeling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

Wire Coating

The total average annualized compliance cost per facility in this industry is estimated to be $130,944 for PELs 1 and 2, and $132,237 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this industry were estimated to be ≤ 0.08 mg/m^3 (10 ppb) for all exposed workers. Engineering control, costs would only be incurred in this sector to achieve PEL 3. The Committee estimates that each facility would require a pneumatic feed system with a glove box, as described above for the Reprocessing sector. The total annualized cost for such a control would be $1,292.

Exposure Monitoring

The Committee assumed that half of the facilities in this sector already have monitoring pumps. At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). Three job classifications would have to be monitored twice a year in all PELs. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $822 for each facility.

Regulated Areas

The MDA receiving, mixing, and coating areas, will all be regulated areas. At a cost of $64.44 per area, the total annual cost per facility would be $193.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.31 per facility.

Protective Clothing and Equipment

The protective clothing and equipment which would be required by the Committee's recommended standard, as described in Part 2 above (Methodology of Cost Estimates), would cost $51,018 for a typical facility of 44 workers. The data from the Heiden survey, on the other hand, suggests that the facilities in this industry already provide their workers with different combinations (depending on the work area) of coveralls, gloves, splash goggles, boots, and disposable tyvek suits. For a typical facility of 44 workers, the total current cost of providing such personal protective equipment is currently $29,905/year. The incremental cost imposed by the recommended standard would therefore be $21,113.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section One (Methodology), an annual thorough clean-up, the use of plastic or the equivalent for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum.

For this sector, the Committee assumed that all these sectors would be incremental, for a yearly total of $13,669 per facility, with the greatest portion coming from the cost of using plastic or the equivalent to collect spills around MDA operations.

Hygiene Facilities and Practices

The Heiden survey indicates that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates).

The annual costs of hygiene facilities and practices in this sector for all PELs would be $93,982.

Medical Surveillance

Based on the data from the Heiden survey, the Committee assumed that workers in this facility already receive initial and yearly medical exam. The only incremental cost estimates by the Committee was for liver function tests ($15/exam). The total yearly cost would be $660.00.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $86/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $295 annually per facility.

Labels

The Committee assumed that all labelling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

Intermediate

The total average annualized compliance cost per facility in this industry is estimated to be $34,870 for PELs 1 and 2, and $36,821 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this industry were estimated to be <0.08 mg/m^3 (10ppb) for all production workers. Since all the production workers are currently exposed to levels equal to or less than 10 ppb, there would be no engineering costs to achieve PELs 1 and 2.

To achieve PEL 3, the Committee estimates that it would be necessary for a typical facility to install a metered feed system and a local exhaust system in the mixing and preform areas. A closed metered system for liquid MDA would cost $15,000 (annualized cost $2,430); the local exhaust system would be a 4 x 4 foot hood with a capital cost of 2,757 (annualized cost $447). Including operation and maintenance, the annual costs of controls needed to achieve PEL 3 would be $4,819.

Exposure Monitoring

Based on the available data, the Committee assumed that the two establishments in this sector already have the required monitoring pumps. At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). Two job classification would have to be monitored twice a year in all three PELs. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $498 in annual monitoring costs for all PELs.

Regulated Areas

Facilities in this sector would have one regulated area per establishment, at an annual cost of $64.44.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no estimated costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.31 per facility.

Protective Clothing and Equipment

The protective clothing and equipment which would be required by the Committee's recommended standard, as described in Section 2 above (Methodology of Cost Estimates), would cost $10,436 for a typical facility of 9 workers. The data available to the Committee indicated that the facilities in this sector currently provide their workers with safety glasses and cotton gloves, at a yearly cost of $146. Therefore, the incremental cost imposed by the recommended standard would be $10,289.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section One (Methodology) an annual thorough clean-up, the use of plastic or the equivalent for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum.

For this sector, the Committee assumed that all these costs would be incremental, for a yearly total of $4,481 per facility, with the greatest portion coming from the cost of using plastic or the equivalent to collect spills around MDA operations.

Hygiene Facilities and Practices

The Committee assumed that all the facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates). The annual costs of hygiene facilities and practices in this sector for all three PELs would be $19,205.

Medical Surveillance

Based on the data from the Heiden survey, the Committee assumed that 66% of all workers in this industry already receive initial and yearly medical examinations, so that the incremental costs the Committee estimated were for the remainder of the workforce, for a total of $346 per facility. There would also be some clerical time required for the required paperwork. These incremental costs would amount to $350 yearly per facility.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $5/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $95 annually per facility.

Labels

The Committee assumed that all labeling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

Coatings

The total average annualized compliance cost per facility in this industry is estimated to be $67,783 for PELs 1 and 2, and $68,009 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this industry were estimated to be <0.160 mg/m^3 (20 ppb) for all production workers.

Since all the production workers are currently exposed to levels equal to or less than 20 ppb, there would be no engineering costs to achieve PEL 1. To achieve PEL 2, the Committee estimates that it would be necessary for a typical facility to install a semi-circular or equivalent hood and pneumatic feed system for the blending, reacting, and packaging areas. The hood would have a capital cost of $1,500 (annualized cost $243) and an operation and maintenance cost of $166 (maintenance plus electricity). The pneumatic feed system would cost $3,100 (annualized cost $502) and an operation and maintenance cost of $635. The total annualized cost for achieving PEL 2 would be $1,547.

To achieve PEL 3, these facilities would require the above controls together with the use of a glove box for handling of solid MDA. The total annualized cost per facility with this additional control would be $1,774.

Exposure Monitoring

Based on the available data, the Committee assumed that the establishments in this sector would have to purchase the required monitoring pumps ($608/pump). At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). Three job classifications would have to be monitored twice a year in all three PELs. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $902 in annual monitoring costs for all PELs, including the annualized cost of the pump.

Regulated Areas

Facilities in this sector would have one regulated area per establishment, the blending and packaging area, at an annual cost of $64.44.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no estimated costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half the amount, or $35.31 per facility.

Protective Clothing and Equipment

The protective clothing ensemble which would be required by the Committee's recommended standard, as described in Section 2 above (Methodology of Cost Estimates), would cost $20,871 for a typical facility of 18 workers. The data available to the Committee indicated that the facilities in this sector currently provide their workers with safety glasses and butyl gloves, at a yearly cost of $202. Therefore, the incremental cost imposed by the recommended standard would be $20,669.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section One (Methodology) an annual thorough clean-up, the use of plastic or the equivalent for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum.

For this sector, the Committee assumed that all these sectors would be incremental, for a yearly total of $6,844 per facility, with the greatest portion coming from the cost of using plastic or the equivalent to collect spills around MDA operations.

Hygiene Facilities and Practices

The Committee assumed that all facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates). The annual costs of hygiene facilities and practices in this sector for all three PELs would be $35,351.

Medical Surveillance

The Committee assumed that all the workers in this industry would have to receive initial and yearly medical examinations, at a cost of $2,076 per facility. There would also be some clerical time required for the required paperwork. These costs would amount to $2,100 yearly per facility.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $35/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $146 annually per facility.

Labels

The Committee assumed that all labeling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

PMR-15 USE

The total average annualized compliance cost per facility in this industry is estimated to be $13,362 for PELs 1 and 2, and $39,670 for PEL 3. The following sections discuss the individual cost elements for this sector.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels in this sector were estimated to be <0.008 mg/m^3 (1 ppb) for all production workers.

Since all the production workers are currently exposed to levels equal to or less than 1 ppb, there would be no engineering costs to achieve any of the alternative PELs.

Exposure Monitoring

Based on the data from the Heiden survey, the Committee assumed that the establishments in this sector already have the required monitoring pumps. At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). PELs 1 and 2, no workers would have to be monitored. For PEL 3, two job classifications would have to be monitored twice a year. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $497 in annual monitoring costs for PEL 3.

Regulated Areas

Facilities in this sector would have one regulated area per establishment, the PMR-15 use area, at an annual cost of $64.44.

Respirators

All three PELs can be achieved for all production workers in this industry sector with the use of engineering controls, and hence there will be no estimated costs for the required use of respirators above the PEL.

Emergency Planning

The first year cost for developing the plans will be $71; annual costs are estimated at half that amount, or $35.31 per facility.

Protective Clothing and Equipment

The protective clothing ensemble which would be required by the

Committee's recommended standard, as described in Section 2 above (Methodology of Cost Estimates), would cost $11,890 for a typical facility of 18 workers. The data available to the Committee indicated that the facilities in this sector currently provide their workers with chemical safety goggles, butyl gloves, and, occasionally, with disposable poly-lined tyvek suits, at a yearly cost of $3,350. Therefore, the incremental cost imposed by the recommended standard would be $8,539.

Housekeeping

The estimated housekeeping costs for this sector will entail, as described in Section One (Methodology) an annual thorough clean-up, the use of plastic or the equipment for spills, visual inspections by a supervisor, clean-up of spills, and a small HEPA vacuum.

For this sector, the Committee assumed that all these sectors would be incremental, for a yearly total of $4,184 per facility, with the greatest portion coming from the cost of using plastic to collect spills around MDA operations.

Hygiene Facilities and Practices

The Committee assumed that all facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (employees above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates). The annual costs of hygiene facilities and practices in this sector for PEL 3 would be $21,906.

Medical Surveillance

Based on the results of the Heiden survey, the Committee assumed that all the workers in this industry would have to receive initial and yearly medical examinations. The only incremental costs which the Committee estimated was for liver function tests, which are not now provided. These tests would have an incremental cost of $270 per facility.

Medical Removal

Using the assumptions described in Section One above (Methodology), the Committee estimated the costs of medical removal and multiple physician review for this industry as $35/year per facility.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $146 annually per facility.

Labels

The Committee assumed that all labelling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

As described in the methodology section, the annual recordkeeping costs are $89 per facility.

Maintenance Workers

Exhibit 5 summarizes the costs of compliance for maintenance workers under any of the three alternative MDA standards. The cost of compliance for maintenance workers ranges between 9–12% of the cost of compliance for production workers. The compliance cost per cancer avoided, also found in Exhibit 6, is $257,905, which is higher than the comparable figure for production workers. The following sections discuss the individual cost elements for this group of workers.

Engineering Controls

As discussed in Chapter II (Industry and Exposure Profile), worst-case exposure levels for maintenance workers in this all industry sectors industry were estimated to be 250 ppb (2 mg/m^3). The use of engineering controls to reduce maintenance workers exposures was not considered a viable alternative thus no costs are attributed to the use of engineering controls.

Exposure Monitoring

Based on the data from the Heiden survey, the Committee assumed that, by and large, all the establishments already have the required monitoring pumps. At all three PELs there would be a clerical notification cost ($6.62 per facility) and a small cost for dermal monitoring ($3.31 per facility). Monitoring would be required twice a year. The cost of monitoring each job classification (each time) would be $122 per sample ($64 in monitoring costs, and $58 for analysis), for a total of $4,402 in annual monitoring costs for all PELs.

Regulated Areas

The estimated cost for regulated areas is covered under the estimates for production workers.

Respirators

Under the assumption that worst-case exposure levels will be 250 ppb maintenance workers would have to be provided a powered air-purifying respirator, at a yearly cost of $336 per unit.

Emergency Planning

These costs are included in the estimates for production workers.

Protective Clothing and Equipment

Maintenance workers would be required to wear the most protective ensemble of protective clothing, including disposable poly-lined tyvek suits, disposable gloves, coveralls. Such an ensemble would cost $9.60 per MDA day of work. The Committee assumed, for the sake of simplicity and in the absence of any information, that maintenance workers are currently provided only with coveralls.

Housekeeping

These costs are assumed to be covered in the estimates for production workers.

Hygiene Facilities and Practices

The Committee assumed that all facilities in this sector already have showers, change rooms and lunchroom facilities which would satisfy the recommended standard. Therefore, it was estimated that there would be no capital costs associated with these requirements.

The yearly costs of complying with the requirements, however, would include the employee time and other costs of mandatory showers (all maintenance employees are assumed to be above the action level), the costs of the clean-up of spills, and the costs of the employee time involved in removing personal protective equipment and washing up before eating, breaks, etc. The method for the exact calculation of these costs is described in Section One above (Methodology of Cost Estimates). The daily costs of hygiene practices for maintenance workers for all three PELs would be $8.49/worker.

Medical Surveillance

The Committee assumed, in the absence of data, that all maintenance workers would need to be medically monitored at a cost of $115.36/worker.

Medical Removal

The Committee estimated no costs in this category, based on the very small number of workers.

Employee Information and Training

The estimated costs for employee training include employee and supervisory time, as well as time devoted to preparing and updating MDA-specific aspects of the training. Using the assumptions described in the methodology section, these costs would add up to $5.72 annually per maintenance worker.

Labels

The Committee assumed that all labelling costs should be considered the result of the Hazard Communication Standard, and thus no costs were estimated for this sector.

Recordkeeping

These costs are covered in the estimates for production workers annual recordkeeping costs are $70 per facility.

Summary—Industry Compliance Costs

Exhibit (1–272) presents the results of the cost of compliance analysis for the eleven industry sectors industries on a per-facility basis.

(vi) Economic Feasibility and Regulatory Flexibility Analysis

(a) Introduction. In accordance with Executive Order No. 12991 (46 FR 13193, February 19, 1981). OSHA has assessed the potential economic impacts of the proposed MDA standard. The preliminary determination is that the regulatory requirement limiting MDA exposure in the workplace, including PEL levels reduced to 10 ppb, would not result in significant adverse economic impact on any of the industry sectors for which detailed financial and compliance data are available.

Pursuant to the Regulatory Flexibility Act of 1980 (Pub. L. 96–353, 94 Stat. 1164 [5 U.S.C. 601 et seq.]), consideration has been given to the mitigation of the economic impacts of the proposed standard on small entities. Based on the available data, it is not anticipated that the proposed standard would significantly affect a substantial number of small entities.

(b) Methodology. The Committee acquired a substantial amount of data regarding compliance technologies in the course of its feasibility analyses. While this material was extremely useful for the Agency's technological feasibility and compliance cost analyses, it was not sufficient to support detailed, rigorous economic and regulatory flexibility analysis. None of the submissions, for example, presented data on the profitability of specific product lines, and detailed financial and economic data were available for only a few firms which produce or use MDA. The Committee therefore relied heavily on the material gathered by both Heiden Associates and ICF to perform a preliminary analysis of the economic impact of the recommended proposal at the industry sector level, under a set of simplified assumptions about the economic and financial conditions of the MDA industries.

Firm-specific control costs based on engineering data supplied to the Committee are developed in Chapter IV for a representative firm in each of the major affected industries. When multiplied by the number of affected facilities in each of these industries, these engineering costs also approximate the total control costs of the regulations. How such costs will be split between the regulated firms and their customers, however, depends on how much prices and quantities change due to the increased costs. These, in turn, are a function of:

- How costs increase relative to the pre-regulatory cost of production in the affected industries;
- The availability and cost of substitutes for MDA; and
- The availability and cost of substitutes for the products of the affected industries.

When increases in costs due to regulation are relatively small, prices and quantities sold should be only slightly effected. Furthermore, because these effects would be small, the distribution of these costs between the affected firms and their customers would not be an important issue.

However, if control costs are substantial, then the availability of substitutes, either for MDA or the products it is used to make, becomes important. If substitutes for MDA are available at less cost than using the MDA after it has been regulated, then the firms using MDA are likely to switch to these substitutes. This will result in lower overall compliance costs than were originally estimated using the control costs of lowering worker exposure to MDA.

If control costs are substantial and there are few comparably-priced substitutes for MDA, then firms that use MDA will attempt to pass on these costs to their customers. But, if there are many comparably priced substitutes for the products made using MDA, customers will switch to these substitutes. In this case the regulated firms can either leave their prices unchanged and absorb the entire amount of the regulatory costs or raise prices, and suffer some erosion in their sales. In the former case, the measured costs of lowering exposure to the PEL are reasonably accurate indicators of the actual cost of compliance (although not necessarily good predictors of secondary economic impacts); in the latter case, they are somewhat less so.

Finally, where there are few comparably priced substitutes for either MDA or the products made from it, prices of these products will rise, but their quantity demanded will change little. In this case, the estimated control costs also are accurate indicators of the costs of compliance with the regulations; however, in this case higher prices are primarily borne by the consumers of the products made with MDA, as opposed to the situation described above where the costs were borne by the firms using MDA.

A substantial amount of information is needed to analyze the economic impacts described above. Not all of it could be developed given the scope and resources of the Committee's investigation. However, in previous work, ICF has investigated the costs of substitute chemicals for MDA in many of its broadly defined uses. In addition, PEI gathered information on substitute costs from individual firms during their site visits. While conducting these visits, PEI also collected some information on current costs of the production activities that use MDA. Finally, ICF has collected and developed some general economic information on the affected industries and the markets of their products and a small number of firms in the MDA industry. Using these data, the Committee has been able to examine the economic effects of the regulations in terms of potential price increases, employment and output effects, and impacts on firms' profitability.

The overall conclusions reached in this chapter are: (1) Most, if not all, of the affected industries ought to be able to pass the regulation's costs through to product purchasers (because of market and other considerations described below), (2) to the extent that output good prices rise in the process of passing these costs through to product purchasers, these price increases are not likely to be very large relative to the pre-regulation prices of the products, and (3) to the extent that prices of products do not rise (so that pass-through of these regulatory costs to product purchasers does not occur), the regulatory costs are not large relative to the other production costs and the net incomes of the companies examined. Consequently, the Committee has concluded that the proposed regulations will not pose a substantial burden to the affected industries, their employees, or consumers of their products.

(*c*) *Price, Output, Employment and Profitability Changes.* Ideally, the price, output, employment, and profitability affects of the proposed regulations limiting worker exposure to MDA would be estimated by modeling the supplies and demands of MDA and the products made with MDA. Regulatory costs shift the supply functions upward, raising product prices and reducing quantities produced by an amount which depends on the size of the regulatory costs and the slopes of the supply and demand curves.

Supply and demand functions for MDA were derived in the course of previous research which evaluates the economic effects of proposed TSCA regulations on MDA producers. That analysis, designed to assess the impacts of a possible ban on the use of MDA under TSCA, is not directly applicable to the assessment of the costs of OSHA regulations of occupational exposure. Furthermore, the detailed information necessary to conduct such analyses is not available for any of the other affected industries. The Committee therefore was forced to rely on alternative, less precise methods for determining the degree to which the costs of the proposed regulations may raise prices and reduce output and employment.

Although the approach adopted in this report for assessing the economic impacts of the proposed regulations does not explicitly build supply and demand functions for the relevant markets, the approach is nevertheless firmly rooted in the same microeconomic framework. That is, the approach flows from the same understanding of the microeconomic mechanisms through which economic impacts result from regulations that motivate more complex and data-intensive econometric methods for assessing price, employment, output, and profitability effects. Thus, in our approach the following standard "linkages" exist:

- Regulations impose costs of compliance (either explicit control costs or costs of substitution of alternative production methods or inputs);
- These costs may either be borne by the regulated firms (more likely in the short run than in the long run), by owners of inputs to these production processes, or by product purchasers (other businesses that use these products in their production processes or ultimately by consumers);
- Costs borne by the regulated firms may present hardships to some of these firms in the form of reduced profitability;
- To the extent that prices of products rise after the imposition of the regulations, this may cause output and employment contractions, and the extent of these reductions depends on the size of the price increases and the sensitivity of demand for the products to price changes (the price elasticity of demand); and
- The location, or incidence, of these regulatory costs depends on a variety of economic factors, conditions, and circumstances relating to supply and demand over time.

Two observations can be made immediately from these linkages. First, these economic impacts fall into two classes, (1) price increases and consequent reductions in output and employment, and (2) profit reductions. Furthermore, the size and severity of these two classes of economic impacts are inversely correlated. That is, if price increases are large, then the reductions in profitability of the regulated industries are likely to be small. Conversely, if profit reduction is large, then the price increases and other impacts are likely to be small. A second observation is that only if the compliance costs are large relative to pre-regulation product prices and profits will economic impacts of any consequence result.

These two observations are central to the analysis of the regulation under consideration because this analysis suggests that most of the regulated industries will probably be able to pass the regulatory costs through to product purchasers in fairly short order. Furthermore, the analysis also suggests that these price increases are unlikely to be very large relative to the pre-regulation prices of these products. Combined with the fact that most of these products have fairly inelastic demands (so that price increases do not translate into significant changes in output and, hence, employment), this suggests that the economic impacts of the regulation are unlikely to be significant.

The theoretical approach for assessing economic impacts of the regulations is based on the methods outlined in ICF Incorporated, "Principles of Regulatory Cost Incidence", a report prepared for the Environmental Protection Agency, January 1986. The framework developed in that report argues that in many cases, a relatively small amount of information can be used to determine at least quantitatively, if not qualitatively, which parties will bear the costs of regulations in the short and the long runs. Because the incidence of regulatory costs drives the relevant economic impacts of concern in this report, and because the information available for this study is limited, adopting this approach seems prudent.

The first step in the analysis is to determine whether these costs are even eligible to be passed through to consumers. For example, if the regulatory costs do not apply to competitors (e.g., requirements do not apply to firms that manufacture outside the U.S.), then it is possible that these costs may not be passed through to product purchasers. On the other hand, if the regulations apply to all relevant competitors, then the costs may well be passed through to consumers. Thus, the first step is to classify the regulations in terms of whether the costs conceivably could be passed through even in the long run.

Next, a series of questions about the regulation's requirements, the cost and competitive conditions of the industry affected, and about factors that affect the speed of adjustment of the market to the new regulatory costs are suggested by the framework. These include the following:

The type of costs imposed by the regulation. Are the costs of compliance likely to vary with firms' output levels (variable costs) or are they roughly independent of output (fixed or sunk costs)? In practice, compliance with regulations will require firms to incur both fixed and variable costs. In such cases, an effort should be made to identify the dominant cost type. If the regulation is essentially of the fixed cost variety, it is possible that none of the costs of compliance are passed through to consumers in the short run. On the other hand, if variable costs predominate, some of the compliance costs are likely to be passed through in the short run.

Estimates of the elasticities of supply and demand for the output of the affected industry. For costs that are eligible to be passed through, the supply and demand elasticities determine the proportion of compliance costs that are passed through to consumers. This step is likely to be the most difficult one if estimates of the relevant elasticities are not available from secondary sources. It may be expedient to simply develop "qualitative estimates" of the elasticities (e.g. very inelastic, elastic, perfectly elastic), and couch the results of the analysis in similar terms. This qualitative approach to estimating the elasticities of demand and supply is a particularly helpful short-cut if there are obvious highly inelastic demanders, such as the military and "high-tech" users for the products regulated. Furthermore, many goods regulated tend to be inputs into other production processes. As such, their demands are "derived" demands which tend to be less elastic than demands for final goods. This is relevant in particular for the products affected by the MDA regulation.

Demand conditions for the affected industry's output and the ease with which firms can enter and exit the industry. This information is necessary to determine the timing of the effects of the regulation. If demand is growing rapidly or if the regulation affects only existing firms, it may only be necessary to assess the ease of entry. However, if demand is not growing substantially and the regulation affects both existing and new firms, the ease of exit should also be examined.

These steps are designed to determine, at least qualitatively, the incidence of the costs imposed by regulations. This pass-through prediction can then be combined with the size of the regulatory costs to answer the ultimate questions of interest in an economic impact analysis. These are whether the price increases, if any, due to the regulation will be large enough to cause concern about output and employment reductions and, alternatively, if the costs are substantially borne by the regulated firms, whether these would pose a significant burden to the firms involved. In the first case, if the costs are not large relative to production costs, a proxy for the ultimate price increase if the costs were to be fully passed through, then large reductions in employment and output are unlikely to result. Similarly, if the costs are relatively small compared to the profits and sales of the regulated firms, then these would be unlikely to pose a substantial burden to the firms.

(*d*) Predicted Economic Impact of the Regulation. Based on the theoretical framework outlined in the previous section, the major classes of information helpful in determining the incidence, and ultimately, the economic effects of the MDA regulation report are the following:

- *The size of compliance costs*—This determines the size of any economic impacts regardless of the parties that bear the costs.
- *The split of compliance costs between variable vs. fixed costs*—Variable costs are passed through to product purchasers faster than are fixed compliance costs.
- *The existence of unregulated competition in the production activities of the regulated firms*—If foreign competitors can produce and export to the U.S. without undertaking the compliance activities required domestically (*and* they can economically do so), then the abilities of domestic firms to pass costs through to product purchasers may be severely limited.
- *The elasticity of demand and supply for the regulated products*—If demand is inelastic, then the regulatory costs are likely to be passed through to product purchasers more rapidly and completely than otherwise.
- *The rate of projected demand growth over time.*—The faster demand is expected to increase during and after the imposition of the regulation, the faster and more complete will be the pass-through of regulatory costs to product purchasers.
- *Production costs for the regulated goods.*—To determine whether any price increase would be large or small relative to the pre-regulation product price, and measures of the financial health of the regulated firms, to determine whether bearing any regulatory costs would pose a substantial burden to the firms.

The compliance cost data presented in Chapter V are the starting point of the economic analysis. The relevant information from that chapter on the annualized costs of compliance are summarized for all the proposed PELs in each of the eleven affected industries in Table 6–1. Down the side of the table are listed the industries affected by the regulations. Across the top of the exhibit are columns for compliance cost and related information on each industry. These are (1) total industry compliance costs, (2) estimated number of firms in the industry, and (3) estimated per-firm compliance costs. The Committee has decided that the available data do support the existence of availability of suitable substitutes for MDA in some applications in some industry segments. However, these data are not sufficiently complete or detailed to allow the development of cost estimates for MDA substitutes across any of the individual sectors studied. Therefore, in this analysis, it is assumed that no substitution away from MDA will occur and, instead, that the industries will undertake the compliance activities and costs.

In addition to the compliance costs *per se*, the framework also requires information on the split of these costs between variable costs (those that vary more or less directly with production output) and fixed costs (those that are required irrespective of the level of output). This information also is provided by the analysis in Chapter V.

Another piece of information useful for implementing the economic impact framework is the production costs for the industries affected by the regulation. Although the data for production costs do not cover all of the industries, some information for companies that are representative of the firms in these industries for 1984 is available. The production cost information used in the analysis is presented in Table 6–2.

We estimated production costs from the information obtained from the site visits conducted by PEI, the imputed firm financial data, Heiden survey data, and the 1982 Census of Manufacturers. Labor cost estimates were derived by multiplying the number of exposed workers per facility by the average days of exposure per facility, times the average number of working hours per day in the production of MDA-containing products (not shown but assumsed to be eight hours per day, except for reprocessing which was assumed to be four hours, and potting and encapsulation, which was assumed to be six hours) times an average wage rate.

Equipment operating costs are available for some of the firms visited by PEI. These site visits also contain information for some companies on the replacement costs of equipment used to make products which contain MDA. However, we believe that these costs only reflect the cost of equipment used by exposed workers. Therefore, we estimated the cost of equipment associated with the production of MDA-containing products by applying the percentage of the firm's total revenues associated with these products (obtained from the site visit reports) to the firm's total stock of fixed assets. These costs were annualized to make them comparable to the estimates of annual regulatory costs using standard methods, assuming a 10-year depreciation period for all capital equipment.

Materials costs are based on information from the 1982 Census of Manufactures. We compared the material costs to labor costs for each of the four-digit SIC in codes which the affected firms are classified. We then multiplied the industry average ratio of these costs by our estimate of labor costs associated with the production of MDA-containing products at each firm to determine a cost of materials in each sector.

Several other pieces of information were gathered from other sources to provide a more complete picture of the incidence and economic impacts of the regulations. Industry output was obtained from input-output coefficients for the affected industries reported in the Heiden survey forms. In combination with the total compliance costs, this information indicates the per unit of output compliance costs associated with the regulation. The lower is this number, the smaller are the likely economic impacts of any sort.

The primary uses of the products regulated are available from the Stanford Research Institute's Chemical Economics Handbook. This information is relevant for determining the possible impacts of the regulations because the identities and productive activities of the primary users of the affected goods yields a crude indication of the elasticity of demand for these goods. For example, if one of the regulated goods is used extensively in defense-related activities, the derived demand for the good is likely to be fairly inelastic, or price-insensitive. Hence, although detailed quantitative estimates of these demand elasticities are not available, this information does provide a qualitative picture of the demand conditions faced by the regulated firms.

Finally, projected demand growth in the near future, mostly qualitative estimates, were obtained from SRI's Chemical Economics Handbook. The economic impacts framework uses this information in a qualitative manner—the higher the expected rate of growth of demand for the outputs of the regulated industries, the faster and more completely the regulatory costs are likely to be passed through to product purchasers.

The information available in each of these categories is displayed in Table 6-3. Each industry affected by the regulations is listed down the left-hand side. Across the top of the table are listed some of the data for the economic impacts analysis described above. These are (1) primary uses for the products, (2) compliance costs for the industry, (3) industry output, (4) compliance costs per unit of output, (5) compliance costs relative to industry production costs, (6) a qualitative estimate of the demand elasticity, (7) a qualitative estimate of future demand growth, and (8) the ratio of variable to total compliance costs.

Unfortunately, some of the information useful in applying the economic impacts framework outlined in the previous section were not available for this analysis. However, most of the critical information required for most of the industries affected by the regulation is shown in the table. In addition, the theoretical framework outlined above can still be applied in cases with incomplete information. The only real consequence of having less than the full set of data for an affected industry is that the conclusions reached by applying the framework may be somewhat less precise than if full information were available.

Before discussing each industry's results individually, a few overall comments are appropriate. First of all, the figures in the table indicate that the compliance costs for most industries are small relative to output and relative to pre-regulation production costs. This suggests that *if* these costs were to be fully passed through to product purchasers, the price increase necessary to do so would not be large. Hence, one would expect relatively small output and employment changes if the costs were to be fully passed through.

The figures in the table also suggest that most of these goods are likely to have fairly inelastic demands for several reasons. First, the ultimate products into which many of these industries' goods feed are products for which the underlying demand for the products is fairly inelastic. Many of the goods are used in national defense and in the aerospace industry. These users are likely to have fairly exacting standards for the performance of the goods they produce, thus suggesting that substitution away from MDA due to a possible price increase is less likely than otherwise. In addition, the goods produced by these industries feed into other goods. The smaller the percentage of the ultimate goods' costs that is accounted for by the MDA-related good, the more inelastic the derived demand for the MDA-related input good. In many of the cases shown in the table, the MDA-related good is a small component of the overall good, suggesting that the derived demand for the MDA-related good will probably have a low elasticity.

Two other implications of the figures shown in the table are important here. The demand growth estimates are, for the most part, positive. Within the framework outlined in the previous section, this indicates that in these cases the likelihood of passing these regulatory costs through to consumers is greater than otherwise and the speed at which this may occur is also greater. Finally, the ratio of variable compliance costs to total compliance costs is quite high for almost all of the industries affected by the regulation. Again, as outlined in the previous section, the greater this ratio, the greater the likelihood (and the speed) of compliance cost pass-through to product purchasers.

An industry-by-industry analysis is as follows:

MDA for Production of MDI

Cost Pass-Through—Compliance costs are a very small percentage of total production costs and they are virtually all variable costs, hence, one would expect that the derived demand elasticity will be quite low. Given that MDI is a fairly far "upstream" input into the production of many goods, and given the positive demand growth expectation, a full pass-through of these costs seems likely and rapid.

Output and Employment Impacts—The increase in price necessary to fully pass through these compliance costs to product purchasers is quite small. Although production costs are not available for these activities, the annualized compliance costs are only about .1 percent of the price of MDA itself. These compliance costs are then surely extremely small as a percentage of the price of MDI and, *a fortiori*, of the price of the ultimate goods made using the MDI. Therefore, negligible impacts on employment and output in this industry are expected based on the information available to this study.

MDA Reprocessing

Cost Pass-Through—Much of the information for reprocessors suggests that compliance cost pass-through may occur. The compliance costs relative to production costs ranges from .38 percent to 2.5 percent and the elasticity of demand for reprocessed MDA is likely to be very low (primarily because MDA is far "upstream" from the ultimate products made using the goods that the MDA assists in producing). In addition, demand is expected to grow over the future for reprocessed MDA, which further indicates that the compliance costs might be passed through to product purchasers.

On the other hand, the ratio of variable compliance costs to total compliance costs is lower for this industry than for the others affected by the regulations, suggesting that cost pass-through could be somewhat delayed. Furthermore, there are imports of reprocessed MDA. These producers of reprocessed MDA presumably will not be subject to the regulation under consideration here. Hence, their costs will not rise. This suggests that importers may be able to undercut the abilities of domestic reprocessors to pass these regulatory costs through to product purchasers. Whether or not these costs can be passed through depends on the marginal costs faced by foreign reprocessing competition including the marginal costs of transporting the reprocessed MDA to the U.S. It may be that the existing levels of imports of reprocessed MDA reflect certain preexisting special advantages of some foreign reprocessors, but that additional imports may not enjoy the same advantages. In this case, compliance cost pass-through is not a certainty.

Output and Employment Impacts—If the compliance costs are passed through to product purchasers, the implied price increases are quite small. In this event, any output and employment impacts are likely to be quite small. On the other hand, if these costs cannot be passed through, the domestic industry's response to this situation dictates the U.S. employment and output impacts of the regulation's costs. That is, if the domestic industry simply absorbs the cost increases (if they are relatively small and manageable), then no domestic employment and output impacts would arise. However, if these firms cannot bear these costs, then it is possible that some employment and output contractions could conceivably occur. Thus, the issue hinges on the abilities of the firms in this industry to bear these compliance costs if they must do so. This question will be explored for this industry and several others affected by the regulations which might be forced to bear some of these regulatory costs, at least in the short run, in the following section.

Filament Winding

Cost Pass-Through—The framework's prediction of the abilities of firms in this industry to pass the compliance costs through to product purchasers is that a full pass-through is quite likely. The ratio of variable compliance costs to total compliance costs is quite high, the demand for these goods is likely to be very inelastic (defense and aerospace users), and demand for these products is projected to grow during the future. These factors indicate that full cost pass-through is likely.

Output and Employment Impacts—Given that the compliance costs will very likely be passed through to product purchasers, the employment and output impacts should be minimal. Although precise estimates of the production costs associated with the activities in this industry are not available, the rise in the price of the ultimate products into which these products flow should be minimal given the nature of the ultimate users. Furthermore, an inelastic demand for the products means that even if a price rise of, say, 5 percent were to occur, little if any change in output or employment would result.

Potting and Encapsulation

Cost Pass-Through—The information gathered for this industry suggests that a full cost pass-through is likely. Although the demand elasticity may not be as low for this industry's products, other considerations indicate full pass-through. The size of compliance costs relative to total production costs is very small (.25 percent), almost all of the compliance costs are variable costs, and demand is expected to grow over time.

Output and Employment Impacts—The implied price change for this industry is extremely small, so that any changes in output and employment would likely be negligible. Hence, economic impacts for this industry should be minimal.

Molding and Bonding

Cost Pass-Through—Some of the information developed for this industry points to a full compliance cost pass-through, but this conclusion is not certain. The ratio of variable to total compliance costs is quite high and demand is expected to grow over time for the products of this industry. However, information on the size of the compliance costs relative to total production costs is not available. Nevertheless, given the nature of the products supplied by this industry, it seems unlikely that the demand elasticity would be very high because sealants and joints are probably small components of the total cost of the ultimate products made. The lack of data for this industry nonetheless means that we cannot predict with high confidence that the industry will be able to pass these costs through to product purchasers. If not, the firms in this industry may bear some of these costs, at least in the short run.

Output and Employment Impacts—If the compliance costs are passed through to product purchasers, the changes in output and employment are likely to be small as long as the elasticity of demand for these products is fairly low. On the other hand, if these costs cannot be passed through, the domestic industry's response to this situation dictates the U.S. employment and output impacts of the regulation's costs. That is, if the domestic industry simply absorbs the cost increases (if they are relatively small and manageable), then no domestic employment and output impacts would arise. However, if these firms can not bear these costs, then it is possible that some employment and output contractions could conceivably occur. Thus, the issue hinges on the abilities of the firms in this industry to bear these compliance costs *if they must do so*. This question will be explored in following section for this and several other industries that may bear some of the regulatory costs.

Advanced Composite Materials

Cost Pass-Through—Although some of the information for this industry is not available, all other indications are that this industry will be able to pass all of the compliance costs through to product purchasers in short order. Demand from these products should be very inelastic due to the nature of the uses to which they are put, positive dermand growth is expected, and the ratio of variable to total compliance costs is quite high. Hence, the framework predicts a full pass-through of these costs.

Output and Employment Impacts—The ratio of compliance costs to total production costs for this industry is very low, just over 1 percent. Given the inelastic demand for these products, minimal changes in output and employment in this industry are expected as result of the small price increases expected.

Polyurethane Curing

Cost Pass-Through—Because of the low elasticity of demand for these products (major users are defense and related industries) and the very small percentage of production costs represented by compliance costs, this industry will probably be able to pass these regulatory costs through to product purchasers. However, this cost pass-through may not occur as rapidly for this industry relative to most of the other affected industries because of the slightly higher proportion of fixed compliance costs to total compliance costs.

Output and Employment Impacts—The ratio of compliance costs to total production costs for this industry is very low, less than .5 percent. Given the inelastic demand for these products, minimal changes in output and employment in this industry are expected as result of the small price increases expected.

Wire Coating

Cost Pass-Through—The products of this industry enter into the production of electrical motors, other electrical parts, and some aerospace and defense-related goods. Hence, the elasticity of derived demand for these products is probably fairly inelastic. Furthermore, the ratio of variable to total compliance costs is quite high and some growth in demand for these products is expected. These considerations suggest that the industry may be able to pass these regulatory costs through to product purchasers.

Output and Employment Impacts—Although price increases of just under 5 percent are expected for this industry, if the derived demand elasticity is low, this is unlikely to generate significant changes in output and employment for the industry.

TGMDA, PACM-20, and PMR-15

Cost Pass-Through—The major users of these products are defense and aerospace, hence the derived demand elasticity is likely to be quite low. Furthermore, demand is expected to grow for these products over time. Compliance costs are also low and heavily skewed toward variable costs, suggesting that this pass-through of compliance costs to product purchasers will be rapid.

Output and Employment Impacts—Given the demand growth and inelasticity of derived demand for these products, the price increases that will occur as the regulatory costs are passed through should not cause any appreciable change in industry output or employment.

Coatings

Coat Pass-Through—Most of the information developed for this industry suggests that the regulation's costs ought to be passed through to product purchasers. MDA's desirable properties in nuclear and petrochemical applications are difficult to reproduce, so the derived demand for these applications could have a fairly low elasticity. Furthermore, the ratio of variable to total compliance costs is quite high, indicating that pass-through should occur reasonably rapidly.

Output and Employment Impacts—Given a fairly inelastic derived demand for these products and that fact that compliance costs are not too great, major changes in output and employment as a result of these regulations are unlikely.

In sum, except for a few cases, the framework suggests that the compliance costs will probably be passed through to product purchasers in fairly short order and that the price increases necessary to cover these costs will be a very small percentage of the pre-regulation prices of these products. This implies that there will likely be negligible changes in output and employment for most of these industries. There are a few possible exceptions to this conclusion which require additional investigation through financial analysis.

(*e*) Financial Analysis of Affected Industries. The analysis in the previous section concluded that most of the industries affected by the regulations are likely to be able to pass the compliance costs through to product purchasers and thus, avoid bearing the costs for a significant period of time. However, the framework used to generate these predictions of economic impacts is primarily qualitative and therefore, cannot yield precise predictions of cost incidence and related impacts. In addition, the industries affected by the regulations may have to bear some of these compliance costs in the short run while adjustments are made. Finally, several of the industries may have to bear some of the compliance costs for some time, so these firms should be examined to determine if the compliance costs might impose significant financial hardship. For all of these reasons, an examination of the financial conditions of these industries is in order.

The basic idea behind a financial analysis of the affected firms is to determine whether the compliance costs are, in some sense, "large" relative to the firms involved. That is, if a firm were required to bear these costs, the question is whether these would be considered to be onerous to the firm. If so, one might be concerned that the firm might cease operations and thereby cause workers to lose their jobs. While there is no precise method for determining when compliance costs are in fact "large" relative to the firms involved, it is generally accepted that if the compliance costs are a significant fraction (say, 20 percent or more) of the available cash flow of the firm, then these might be considered to be large. Therefore, this section develops the financial data and performs the comparisons necessary to determine whether the compliance costs are significant relative to the financial conditions of the regulated firms.

Estimating Annual Available Cash Flow

Because of data limitations, the analysis was limited to seven firms in only five industries affected by the regulations. ICF estimated the annual cash flow available for financing the regulatory costs using the affected firm or facilities' 1986 net income from the products made with MDA. Data at the facility level are best for this purpose, and were used wherever possible because the effects of the compliance costs are more likely to be felt at that level, rather than at the level of the firm. However, only firm-level data were available in most instances. In these cases, we used the firm-level data for the smaller firms, because they generally have only a few facilities. The major chemical companies were not included in this financial analysis because these firms have many facilities and usually produce a much more varied range of chemicals and chemical products. These firms generate only a very small proportion of their total revenue from MDA, and thus, could not be significantly impacted by the regulations considered here.

The development of the firm or facility net income estimates is described in the discussion of the baseline economic information in Chapter II. Tables 6-5 through 6-11 at the end of this chapter present the imputed financial characteristics for the seven firms included in this analysts. The portion of revenues from products made with MDA is applied to the firm or facility-wide net income to estimate the portion of the net income that is derived from the products made with MDA. It is believed that net income is a good indicator of a firm or facility's ability to incur additional cost because it is, in the absence of unusual circumstances or business conditions, a reasonably reliable indicator of the amount of cash available to a firm or facility on a year-to-year basis after renewal and replacement of current plant and equipment. The portion of internal cash flow for renewal and replacement is estimated by the cash provided by depreciation, amortization, and depletion charges.

Another assumption in these estimates is that the recent financial performance of a firm or facility can be validly extended into the future. Specifically, it is assumed that the recent net income is a good proxy for the net income which will be generated in the coming years when compliance costs will be incurred. This assumption is supported by extensive academic research on the time series properties of earnings.

Comparing Annualized Regulatory Costs To Available Cash Flow

To determine whether compliance costs for a firm or facility are significant, they must be compared to a measure of the financial status of that firm or facility. Specifically, the after-tax annualized compliance costs were compared to the annual net income of the firm or facility. If these costs represent more than 20 percent of net income, or if the firm's net income is less than zero, then this firm or facility was identified as possibly having financial difficulties in complying with the proposed regulation if it had to bear the compliance costs rather than product purchasers. The caveat is important since most of the industries affected by the regulations will be able to pass the compliance costs through in the form of price increases. Only a few of the industries may have to bear these costs for any significant period of time, hence it is only really these few that are particularly relevant in this financial analysis.

Compliance costs were converted to an after-tax basis for several reasons. First, such costs can be deducted from taxable income for a firm to reduce tax payments. In addition, it is necessary to put the compliance costs on an after-tax basis because the estimates of net income to which the costs are compared are also on an after-tax basis.

Both initially occurring capital and the annually occurring compliance costs were converted to after-tax dollars by multiplying by one minus the firm's average tax rate. The average tax rate was provisionally assumed to equal 28 percent plus four percent for state and local taxes.

For some firms, especially those that are small or less profitable, the average tax rate is less than 28%, so that our assumption will tend to understate after-tax compliance costs. After-tax compliance costs are further understated because the tax savings from depreciation expense on initially occurring capital costs are not allocated over the life (as defined for tax purposes) of the capital, but are instead assumed to accrue fully in the year in which the capital is purchased. However, such downward biases are blunted to the extent that investment tax credits are not applied. This has the effect of overstating the amount of after-tax compliance costs for the firm or facility. Furthermore, for all but the most stringent PEL, capital costs are a relatively small component of the total costs of compliance in most sectors. This should minimize the effects of the biases discussed above.

Table 6-4 summarizes this financial analysis. The facilities or firms that were tested are listed under each of their respective industry segments along with their estimated net income. The relation of net income to the annualized compliance costs is shown in the final column.

Compliance costs are clearly inconsequential for all but one of the firms examined. Indeed, in many cases the compliance costs are less than 1 percent of the net income of the affected firms. Furthermore, Dun and Bradstreet lists the conditions and outlooks for these firms as "strong", "good", and "up". Thus, if these firms were to have to bear the compliance costs in the short run or longer, they would be unlikely to find the costs burdensome.

The only firm identified in this analysis as potentially experiencing difficulties bearing the compliance costs is Avery, a firm only about 2 years old. In late 1986, Avery purchased the chemicals division of Uniroyal. Avery also has coal-related businesses. In 1986, Avery had positive net income prior to the purchase of Uniroyal's chemical division. However, in a recent incomplete financial statement, Avery report vastly increased sales, but negative net income. The losses currently being experienced by Avery are probably those naturally associated with new businesses, and especially firms associated with energy markets. Furthermore, in acquisitions of large enterprises, special charges against earnings are very common. This is probably the source of the negative net income for Avery in the most recent statement. Thus, the current financial condition of Avery is probably not indicative of the future health of the firm. Furthermore, prior to its purchase by Avery, the chemicals division of Uniroyal operated at a substantial profit, with net income in 1984 of more than 27 million dollars. Thus, Avery's current financial position is probably not caused by the chemicals business, in fact, the chemicals business may be providing net income to the parent company. In any event, the losses currently being experienced by Avery are probably transitory and thus, should not pose a barrier to complying with the regulations.

In conclusion, this analysis suggests that none of the firms which we have chosen as being typical of specific MDA industry segments are likely to have major problems in financing the costs of these regulations if they had to bear these costs. Therefore, to the extent that the firms in the affected industries are unable to pass-through the regulatory costs in the form of increased prices to customers, they still should be able to absorb these costs themselves and avoid any changes in their own employment or production. It should be noted again that the lack of financial and MDA product-related data make the development of detailed quantitative evaluation of regulatory impact difficult for some of the industry sectors.

(*f*) Limitations of the Analysis. To the extent that the firms which we have studied are representative of the industry segments which produce, process, or use MDA, the analysis we have performed provides an indication of the potential costs and economic impacts that would occur with the imposition of the compliance scenarios which we have constructed.

The major limitation of this analysis is the difficulty in extrapolating from the results of our sample of firms to the entire industries which are affected. Estimates of both cost and economic impact were usually based on data from only one or a few firms in the industry. Hence, the conclusions reached in this chapter will hold for the affected industries as a whole only if the firms which we have analyzed are typical of these industries.

Nevertheless, it is still possible to evaluate general business conditions of the major user industries. The potential growth in some of the major end uses and solid growth in their markets will make it easier to either pass on higher costs in the face of increased demand, and/or absorb higher compliance costs with higher profits.

The majority of MDA not used in production of MDI is used for epoxy curing. Epoxies are classified as thermosetting resins, and several sources describe this market as mature. However, some of the segments of the epoxy resin markets in which MDA is most likely to be used are projected to grow at a somewhat faster rate than the overall projected growth rate in the epoxy resin industry of 6 percent. These uses for which growth forecasts is expected to be higher include electrical and aerospace laminates and encapsulations.

The outlook for the electronic and aerospace industries is mixed. The electronics industry recently entered a slump after a record year in 1984. Over the longer term, however, it is likely that growth should resume, propelled by advancements in technology and expanding applications.

The aerospace industry, fueled by a continued strong flow of military orders, should grow steadily in the years ahead despite current setbacks in the U.S. space effort. Despite controversy over the level of U.S. defense spending, it is unlikely that these expenditures will be significantly cut. Military aircraft procurement is forecasted to continue to grow. Commercial aircraft production should also grow markedly, given the enormous commercial aircraft replacement needs and the brighter prospects of commercial airlines. These facts are also favorable for continued growth in the markets of PMR-15, which is used in military and civilian aircraft applications.

These factors all suggest that most, if not all, of the MDA using industries should be able to comply with the regulations without any severe economic dislocations.

(vii) Assessment of Nonregulatory Alternatives

(a) Introduction. The declared purpose of the Occupational Safety and Health (OSH) Act of 1970 was "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources. . . ." Thus, the Act requires the Secretary of Labor, when promulgating occupational safety and health standards for toxic materials or harmful physical agents, to set the standard "that most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity. . . ." It is on the basis of this congressional directive that OSHA has initiated regulatory actions to reduce the adverse health effects associated with occupational exposure to MDA.

Economic theory suggests that the need for government regulation is greatly reduced where private markets work efficiently and effectively to allocate health and safety resources. The theory typically assumes perfectly competitive labor markets where workers, having perfect knowledge of job risks and being perfectly mobile among jobs, command wage premiums that fully compensate for any risk of future harm. Thus, theoretically, the costs of occupational injury and illness are borne initially by the firms responsible for the hazardous workplace conditions and, ultimately, by the consumers who pay higher prices for the final goods and services produced by these firms. With all costs internalized, private employers have an incentive to reduce hazards wherever the cost of hazard abatement is less than the cost of the expected injury or illness. The resultant level of safety and health is considered "efficient" in the sense that it minimizes the sum of the costs of hazard prevention and of injury or illness, perfectly competitive labor markets, however, do not exist for many industrial markets. OSHA, therefore, believes that it must take appropriate actions to provide greater health protection for workers exposed to toxic substances.

The preponderance of evidence indicates that market forces have resulted in excessive exposure to MDA in the workplace, thereby contributing to the consequent development of MDA-related diseases. In spite of the clinical evidence of the dangers of MDA, the social costs of production have not been internalized, in part, because of market imperfections and the existence of externalities. This causes the amount of protection that the private market will offer to workers exposed to MDA to diverge from the socially desired level of protection.

First, evidence on occupational health hazards in general and MDA in particular suggest that in the absence of immediate or clear-cut danger, employees and employers have little incentive to seek or provide information on the potential long-term effects of exposure. Employers faced with potentially high compensatory payments may, in fact, have a disincentive to provide information to employees. When relevant information is provided, however, employers and employees might still find informed decisionmaking a difficult task, especially where long latency periods precede the development of chronic disabling disease. Moreover, if signs and symptoms are nonspecific—that is, if an illness could be job-related or could have other causes—employees and employers may not link disease with exposure.

Second, even if workers were fully informed of the health risks associated with exposure to MDA, many face limited employment options. Nontransferability of occupational skills and high national unemployment rates sharply reduce a worker's expectation of obtaining alternative employment quickly or easily. Skilled tire builders and workers in light oil recovery units, for example, would not have the option of changing jobs to find a safer workplace if they wanted to continue to work at similar jobs because most large cities do not have many, if any, such workplaces.

In many regions of the country, the practical choice for workers is not between a safe job and a better paying but more hazardous position, but simply between employment and unemployment at the prevailing rates of pay and risk. In addition to the fear of substantial income loss from prolonged periods of unemployment, the high costs of relocation, the reluctance to break family and community ties, and the growth of institutional factors such as pension plans and seniority rights serve to elevate the cost of job transfer. Thus, especially where wages are more responsive to the demands of more mobile workers who tend to be younger and perhaps less aware of job risks, hazard premiums for the average worker will not be fully compensating. Where this is the case, labor market negotiations are unlikely to reflect accurately the value that workers place on health.

In addition to the market imperfections, externalities result in employers and employees settling for an inefficiently low level of protection from toxic substances. For the competitive market to function efficiently, only workers and their employees should be affected by the level of safety and health provided in market transactions. In the case of occupational safety and health, however, society shares part of the financial burden of occupationally induced diseases, including the costs of premature deaths, excess sickness, and disability. Those individuals who suffer from occupationally related illness are cared for and compensated by society through taxpayer support of social programs, including welfare, Social Security, and Medicare. These combined factors of labor market imperfections and the influence of externalities contribute to the failure of the market to supply healthful working conditions in industries where MDA hazards exist.

(b) Tort Liability. Greater reliance on the use of liability under tort law is one of the examples of a nonregulatory alternative identified and set forth by the Office of Mangement and Budget (OMB) guidelines for implementing Executive Order 12291. Prosser describes a tort, in part, as a "civil wrong, other than a breach of contract, for which the court will provide a remedy in the form of an action for damages," although he says that "a really satisfactory definition has yet to be found."

If the tort system applies, it would allow a worker whose health has been adversely affected by occupational exposure to MDA to sue and recover damages from the employer. Thus, if the tort system applied it might shift the liability of direct costs of occupational disease from the worker to the firm under certain specific circumstances.

With very limited exceptions, however, the tort system does not apply in dealings between employees and their employers. All states have legislation providing that Workers' Compensation is either the exclusive or principal remedy available to employees against their employers. Thus, tort law can only be applied to third party suppliers of the hazardous substance. It is often difficult, however, to demonstrate causation, which is a necessary prerequisite for the successful application of tort liability against these suppliers.

First, knowledge that the worker has been exposed to MDA must exist. The worker and/or the physician must be aware of both the magnitude and duration of exposure to MDA and the causal link between the disease and the occupational exposure. Furthermore, it could be extremely difficult to isolate the role of occupational exposures in causing the disease, especially if workers are exposed to many toxic substances. This difficulty is further compounded by the long latency periods that are frequently involved. Second, the liable party must be identifiable, but workers may have several employers over a working lifetime. Third, the scientific and medical evidence available to support the contention that the disease was caused by the on-the-job exposure must withstand judicial standards for proof of causation. This is very difficult in the case of MDA because of the long latency period for carcinogenic effects, although acute disorders, such as liver disease would appear more rapidly.

The costs associated with producing information and with litigation itself may be quite substantial. This general undersupply of information adversely affects the workers' awareness of the causation of their illness and thus reduces the likelihood that they will pursue tort liability suits.

Second, legal proceedings incur costs to both plaintiffs and defendants. Victims of torts must incur legal fees associated with bringing about court action. In deciding whether or not to sue, the victim must be sure that the size of the claim will be large enough to cover legal expenses. In effect, the plaintiff is likely to face substantial transaction costs in the form of legal expenses. These are commonly set at a 33-percent contingency for the plaintiff's lawyer, plus legal expenses. The accused firm must also pay for its defense.

The majority of occupational disease tort activity has involved workers exposed to asbestos. To date, about 25,000 individual plaintiffs have filed asbestos lawsuits in the country. The reason that these employees could avoid the exclusive remedy of Worker's Compensation is that they sued suppliers of asbestos instead of employers. This remedy is not generally available in the case of MDA, as the employer does not buy MDA (i.e., MDA is released from process streams). A report prepared by the Research Triangle Institute entitled, "Tort Liability and Worker Health: An Examination of the Economic, Legal, and Scientific Issues Surrounding the Occupational Disease Protection Afforded by Tort Law", contains some data pertaining to legal costs and the size of awards. One investigator, for example, found that an average ratio of legal costs to proceeds was 37 percent for a sample of cases. The data, however, do not separate legal fees paid by the defendants and plaintiffs.

In reviewing recent tort liability cases covering occupational disease, OSHA found no cases for workers exposed to MDA. OSHA believes that the tort system does not adequately protect workers from the health hazards associated with MDA exposures. In fact, the above cases represent a very small number of cases and reflect the difficulty in finding a supplier to sue. The only defendant who would be liable to substantial damages under the tort liability system is a supplier. In addition, suppliers are difficult to identify in the industries that utilize MDA containing products. In fact, asbestos is the only situation where lawsuits frequently have been successful against suppliers.

It is unusual for insurance and liability costs to be borne in full by the specific employer responsible for the risk involved. For firms using insurance, the premium determination process is such that premiums only partially reflect changes in risk associated with changes in MDA or other hazardous exposures. This results in the so-called "moral hazard problem," which is the risk that arises from the possible dishonesty or imprudence of the insured. As the insured has paid for an insurance company to assume some of his or her risks, he or she has less reason to exercise the diligence necessary to avoid losses. This transfer of risk is a fundamental source of imperfection in markets.

For firms that self-insure or carry liability insurance with a large deductible, the costs of a single claim may be fully borne by the firm. Very small firms, and large firms with a large number of claims, however, may fail to meet the full costs by declaring bankruptcy. For example, the Johns Manville Corporation declared bankruptcy to avoid massive claims associated with asbestos-related disease. Although this firm experienced sharp decline in the value of its stock, it is still in business, while its obligation to pay asbestos-related claims is in considerable doubt. Other asbestos producers including U.N.R. Industries, Inc., and Amatex Corporation have followed the example of the Manville Corporation by filing for bankruptcy. This further lessens the chances that workers contracting MDA-related occupational diseases as employees of these companies or as employees of companies that used their products will collect tort liability awards.

(c) Workers' Compensation. The Worker's Compensation system is a result of the perceived inadequacies in liability or insurance systems to compel employers to prevent occupational disease or compensate workers fully for their losses. This system was designed to internalize some of the social costs of production but in reality has fallen short of compensating workers adequately for occupationally related disease. Thus, society shares the burden of occupationally related adverse health effects, premature mortality, excess morbidity, and disability through taxpayer support of social programs such as welfare, social security disability payments, and Medicare.

Compensation tends to be inadequate, especially in permanent disability cases, in view of the expiration of benefit entitlements and the failure to adjust benefits for changes in a worker's expected earnings over time. At the end of 1977, 11 states still restricted permanent disability benefits either by specifying a maximum number of weeks for which benefits could be paid or by imposing a ceiling on dollar payments.

Time and dollar restrictions on benefit payments were even more prevalent in the area of survivor benefits. The duration of survivor benefits was generally restricted to 10 years, and dollar maximums on survivor payments ranged from $14,000 to $60,000. In addition, it should be noted that if the employee dies quickly from the occupational illness and has no dependents, the employer need pay only nominal damages under Workers' Compensation (i.e., a $1,000 death benefit).

Finally, in spite of current statutory protection, disability from occupational diseases represents a continuing, complex problem for Workers' Compensation programs. Occupational diseases may take years to develop, and more than one causal agent may be involved in their onset. Consequently, disabilities resulting from occupationally induced illness often are less clearly defined than those from occupationally induced injury. As a result, Workers' Compensation is often a weak remedy in the case of occupational disease. For example, as recently as April 1983, the U.S. Supreme Court refused to hear an occupational disease case (*Richard D. Bunker* v. *National Gypsum Co.*) involving a worker who was diagnosed as having asbestosis 23 years after the expiration claim. Indeed, there is some evidence indicating that the great majority of occupationally induced illnesses are never reported or compensated.

The insurance premiums paid by a firm under the Workers' Compensation system are generally not experience rated, that is, they do not reflect the individual firms's job safety and health record. About 80 percent of all firms are ineligible for experience rating because of their small size. These firms are class rated, and rate reductions are granted only if the experience of the entire class improves. Even when firms have an experience rating, the premiums paid may not accurately reflect the true economic losses. Segregation of loss experience into classes is somewhat arbitrary, and an individual firm may be classified with other firms that have substantially different normal accident rates. An experience rating is generally based on the benefits paid to workers, not on the firm's safety record. Thus, employers may have a greater incentive to reduce premiums by contesting claims than by initiating safety measures.

In summary, the Workers' Compensation system suffers from several defects that seriously reduce its effectiveness in providing incentives for firms to create safe and healthful workplaces. The scheduled benefits are significantly less than the actual losses to the injured workers and recovery is often very difficult in the case of occupational diseases. Thus, the existence of Workers' Compensation system limits an employer's liability significantly below the actual costs of the injury. In addition, premiums for individual firms are unlikely to be specifically related to that firm's risk environment. The firm therefore does not receive the proper "signals" and consequently fails to invest sufficient resources in reducing workplace injuries and illnesses. The economic costs not borne by the employer are borne by the employee or, as is often the case, by society through public insurance and welfare programs.

(d) Government Regulations. In order to compensate for market imperfections (some of which are detailed above), a number of federal and state regulations have been promulgated that attempt to improve the allocation of resources. While some of these regulations may have a limiting effect on occupational exposures to MDA, OSHA does not believe that these regulations obviate the need for an OSHA standard regulating occupational exposure to MDA.

(e) Standards Developed by Agencies Other Than OSHA. No standards have been developed by other Agencies.

OSHA Standards

There is currently no occupational standard regulating worker exposure to MDA.

(viii) Cost-Effectiveness of the Regulatory Alternatives

Introduction. The Committee reviewed data that (Chapter III) estimated the number of MDA-induced deaths that would occur under current industry conditions, and under three alternative permissible exposure limits (PELs). Using these data, the Committee concluded that a standard was warranted to reduce the risk. This risk can be substantially reduced under each of the alternative PELs studied.

In Chapter IV, the Committee evaluated three alternative PELs on the basis of technological feasibility and concluded that the 10 part per billion alternative is the lowest feasible PEL. In Chapter IV, the Committee evaluated the 10 part per billion alternative and concluded that it would be economically feasible to implement and would not result in adverse economic impacts to small business entities. On the basis of these analyses, the Committee concluded that it should propose to reduce the present PEL for occupational exposures to MDA from the current exposures to 10 ppb.

In the following paragraphs, the cost effectiveness of the alternative PELs is evaluated. As indicated, this shows that, although the 10 ppb PEL is not the lowest average cost-per-death-avoided the marginal cost of saving additional lives relative to the 20 ppb PEL is clearly small enough to be social welfare enhancing. The marginal cost of saving lives by moving to the 1 ppb PEL however is far more expensive and technologically infeasible for some industries. Consequently, the Committee has identified the 10 ppb PEL as the most cost effective PEL for controlling exposures to MDA.

Methodology

The U.S. Supreme Court, in the cotton dust decision, ruled that OSHA could not set health standards on the basis of cost-benefit analysis. OSHA therefore has applied a cost-effectiveness analysis only to evaluate the expected impacts of the proposal. In one important respect, cost-effectiveness analysis is simpler to apply because it does not require a determination of the "the value of life." Moreover, much of the initial methodology of cost-effectiveness analysis is similar to that needed for cost-benefit analysis and therefore provides data and perspectives helpful both to policymakers and to those who review regulatory actions. For example, Peskin and Seskin have stated the following:

> [A] complete policy evaluation of a project would not be limited to a cost-benefit analysis but, in addition, would include considerations . . . [such as] its political feasibility, its legality, etc. . . . However, the analytical process behind this determination may be useful in itself. In this effort to compare costs and benefits, the analyst must clarify project objectives, identify affected parties, assemble relevant technical data, enumerate tangible and intangible program effects, etc.—information that is critical for the broader purpose of policy evaluation.

Where the hazard at issue is typically fatal, estimating the cost per death avoided is the most appropriate method of evaluating the cost effectiveness of health standards. The lower this ratio, the greater the return that society can expect, in terms of lives saved, from each dollar invested in the health and safety area. In order to calculate these ratios, it is necessary either to compare the costs and the number of deaths avoided over identical time periods or to express them in comparable terms (e.g., annualized or present value). In either case, an accurate knowledge of the benefits occurring in each time period is required. The information that would be most useful in estimating the number of lives saved is a dynamic model that quantifies the relationship between MDA exposures and the risk of contracting MDA-induced disease. Such a model would provide estimates of the number of MDA-induced deaths occurring each year during the transitional [2] period. Although this model is not available for MDA, some data are available that can be used to estimate a range of the number of lives saved in each period.

The timing of the benefits is important because the Office of Management and Budget (OMB) requires that future costs and benefits be discounted. Some noted policy analysts, such as W. Kip Viscusi agree that deferred benefits should be discounted. Others, such as Lester Lave, question the appropriateness of discounting lives saved in future periods. Consequently, in this analysis, the Committee used a static model to estimate the cost-per-death-avoided ratios on the basis of two alternative hypotheses. The first hypothesis states that the impact of the transitional period has a negligible effect on the cost-per-death-avoided ratios. This would be the case either if the period is extremely short or if the benefit levels during the period are not significantly different from those associated with the new PEL. The second hypothesis states that no benefits occur during a relatively long transitional period.

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[2] In this analysis, the transitional period is defined as the period after the implementation of a revised standard when the risk rates are lower than those associated with current exposure levels but higher than those associated with exposures at the revised PEL. It is a period of disequilibrium because there are individuals still in the work force who have had disease initiated due to previous exposures. The transitional period ends when these individuals leave the work force and a new equilibrium is established at risk rates associated with the revised PEL.

The Committee believes that the first hypothesis (i.e., that the transitional period does not significantly affect the cost-per-death-avoided rations) is justified on the basis of at least two well-established scientific models. First, if the development of MDA-induced cancer is a multistage process, then lowering exposures would result in the immediate benefit of decreasing the likelihood of the occurrence of the last, or carcinoma, stage. Thus, there would be a very rapid reduction in risk rates. Second, if MDA acts as both an initiator and a promoter of cancer (i.e., is a late stage carcinogen), then reducing the intensity of exposure for those who have already had the cancer initiated may extend the time before symptoms of the disease are manifested. Lowering worker exposures to MDA will immediately delay the development of cancer for those employees who were exposed in the past. Thus, the risk rates during the transitional period will quickly decline although they may not stabilize for quite some time, because some individuals may develop cancer at a later time due to their previous exposures. In addition, regardless of whether MDA induces cancer via a multistage process or is a promoter of cancer, if the time period from initiation to death is short, then the transitional period will also be short, because workers who contracted the fatal disease as the result of current exposures will not be in the work force very long.

The alternative hypothesis used in this analysis is that benefits do not begin until after a lengthy transitional period has passed. As no estimate is currently available of the period from reduced MDA exposures to a stabilization of risk at rates associated with the lower exposure levels, the Committee has used the latency period, which is defined in this analysis as the period from initial exposure to death from disease, as a surrogate for the length of the transitional period. The use of this latter hypothesis is equivalent to assuming that some workers in the existing work force have already contracted MDA-induced illness and will receive no benefit from lower exposures, and that all deaths during the transitional period are the result of prior MDA exposures. Estimates derived from this hypothesis, therefore, are implicitly based on the assumption that no benefits accrue during the transitional period, as the result of reduced risk, to new entrants into the work force or to old employees who have not yet had cancer initiated.

The Committee does not believe that this hypothesis (i.e., that no benefits accrue from reduced exposure until after the latency period has passed) is realistic for two reasons. First, although the Committee was not able to quantify benefits for the transitional period, the Agency believes that some benefits will accrue during this time. For example, in the case of lung cancer and cigarette smoking, for which more data are available than are available for the association of MDA and cancer, the average latency period is greater than 20 years. Individuals who stop smoking, however, experience a 30-percent decline in their excess cancer risk within 1–4 years after cessation of smoking, and an 85-percent reduction in risk within 5–9 years after cessation of cigarette smoking. Another example is the association between exogenous estrogens and endometrial cancer. Women who were given exogenous estrogens have demonstrated an increased risk of developing endometrial cancer. Although the average latency period for the clinical observation of endometrial cancer ranges between 4 and 8 years, studies have demonstrated a 45-percent reduction in this elevated risk within 1–2 years following cessation of exposure to exogenous estrogens, and a 70-percent reduction in the increased risk after 5 years of cessation.

Second, the Committee believes that the hypothesis of no benefits accruing during a period of time equal to the latency period (i.e., the time from the first exposure to death from cancer) is unrealistic because the latency period is longer in duration than the transitional period. The latency period overstates the time period from initiation of disease to death because it includes the period from first exposure until the worker contracts the disease. Clearly, it is improbable that many workers in these studies contracted MDA-induced cancer on the first day of exposure. More likely, it took several years, possibly a decade, before the workers actually contracted cancer. The assumption that no benefits will occur until after the latency period has passed, therefore, underestimates the benefits that would accrue as a result of a revised standard.[3]

The Committee's best estimate of the average latency period is approximately 20 years (based on the NIOSH HHE data).

Hypothesis of Immediate Benefits

The estimates calculated in this section are based on the hypothesis that the transitional period from reduction in exposures to reduction in the risk rates has a negligible impact on the cost-per-death-avoided ratios. It is assumed that either the transitional period is very short or that the risk rates during that period are closely approximated by those associated with the new PEL. Under this hypothesis, the full benefits accruing from a revised proposal will begin shortly after implementation (i.e. deaths will be avoided due to an immediate reduction in the incidence of the number of individuals contracting the disease.)

The cost-per-death-avoided under this assumption was calculated by dividing the annualized costs associated with each proposal by the annual number of lives saved (see Tables 7 and 8 of this analysis).

Hypothesis of No Benefits During a Long Transitional Period

The estimates calculated in this section are based on the hypothesis that (1) deaths due to past exposures will continue to occur at the former rate for some period after the PEL has been reduced and (2) no benefits will accrue to disease-free individuals until after the transitional period has passed. Under this hypothesis, the benefits from the implementation of a revised standard (in terms of a reduced incidence of MDA-induced diseases) will not begin until after the transitional period has passed. In other words, although society will start paying for the provisions associated with the revised standard shortly after the standard is promulgated, the benefits associated with these provisions will not be detected until the passage of some substantial period of time.

The cost-per-death-avoided ratios calculated in this section were derived by discounting the annual number of deaths prevented to account for their deferred nature and to provide upper bound cost-per-case-avoided estimates. As stated above, however, the Committee believes that these upper bound estimates understate the true benefits associated with the recommended proposal.

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[3] Contrast this situation, for example, with the studies of atomic bomb survivors in Japan. In this case, there is a clearly defined point in time when individuals died from leukemia relative to the initiation of disease (the year the bomb was dropped). As the first exposure and the initiation of leukemia coincide, the use of the latency period (median 7.7 years), therefore, does not overstate the length of the transitional period.

The Committee calculated the costs-per-death-avoided under this hypothesis by multiplying the annual number of deaths avoided by a discount factor, which was calculated by using the formula presented below.

$DF_L = (1 + r)^{-n}$

where:

DF_L = Discount Factor for MDA
r = Discount Rate
n = Years Discounted = Mean Induction Period = 20 years.

The cost-per-death-avoided ratios for each alternative were then calculated by dividing the annualized costs associated with each proposal by the total discounted number of lives saved. The results of these calculations are presented in Table VIII–2 for discount rates of 10 percent and 6 percent. (When a 10-percent discount rate is used as recommended by OMB, then the cost-per-death-avoided associated with the proposed 10 ppb PEL is $3,856,628, and when a 6-percent rate is used, the cost-per-death-avoided becomes $1,841,842.

There is voluminous technical literature on the discount rates applicable to the evaluation of public expenditures. One line of reasoning is that if public expenditures displace private alternatives, then the appropriate discount rate is the rate of return to investments of comparable risk and maturity in the private sector. Another argument is for the use of a lower social rate of discount that reflects the rate at which society is willing to exchange present consumption for future consumption. The December 1984 National Science Foundation study highlights the work of Robert Lind, who integrated the above concepts and found the appropriate rates to be from 2 percent to 4.6 percent.[4] As a result, the Committee believes that, at this time, the 6-percent discount rate would be the most reasonable for the cost-effectiveness analysis of the proposed MDA alternatives, although we emphasize that the selection of the 10 ppb PEL as the alternative with the lowest cost-per-case-avoided is insensitive to the discount rate used.

Conclusion

The Committee recommends the 10 ppb PEL as the most cost-effective alternative for two reasons. First, the 10 ppb PEL is the lowest feasible PEL based on the industries' analyses presented in Chapters IV and VI. That is, 10 ppb is the lowest PEL that can feasibly be met by some of the regulated

Second, the Committee examined both the average cost per life saved of the 10 and 20 ppb PELs. Although the average cost per life saved under the 10 ppb PEL is slightly higher than under the 20 ppb PEL, the marginal cost of moving from the 20 to the 10 ppb PEL is only about $600,000 on an annualized basis. However, an additional 0.4 lives will be saved under the 10 ppb PEL. This implies that the marginal cost per life saved of moving from the 20 to the 10 ppb PEL is about $1,500,000. This is well within the policy bounds normally established for regulations of this type. The marginal cost of moving from the 10 to the 1 ppb PEL, however, has a marginal cost per life saved well over twice that of the 10 ppb PEL. Furthermore, the 1 ppb PEL is technologically infeasible for some industries. Hence, the Committee has identified the 10 ppb PEL as the most cost-effective PEL for MDA.

At this point, however, a note of caution is necessary. The lack of precise scientific knowledge about the mechanistic relationship between MDA exposure and MDA-induced disease limits the confidence one can place in the absolute ratios developed. This is especially true for the ratios calculated under the hypothesis of no benefits during a long transitional period. Implicit in the use of this hypothesis is the assumption that there is a group of workers who have already contracted MDA-induced disease and who will not benefit from reduced future exposures or from medical surveillance.

In addition, the cost-per-death-avoided ratios calculated above, under either hypothesis, underestimate the anticipated benefits of the proposal because the Committee quantified only the potential deaths avoided due to a lower incidence of cancers. As noted in Chapter III, the Committee also expects that some additional lives will be saved due to a reduction in other types of fatal disease. Moreover, the Committee has not quantified the expected incidence of nonfatal disease. Based on a consideration of all of these factors, the Committee concludes that the estimates calculated under the hypothesis of full benefits during the transitional period are more likely to reflect the true values than those calculated under the hypothesis of no benefits during the transitional period. Thus, the estimate of $574,449 per-death-avoided is the Committee's best estimate of the cost-effectiveness of the proposed 10 ppb standard.

In sum, the available scientific evidence clearly demonstrates that MDA exposures are a life-threatening hazard in the workplace. Consequently, it is the conclusion of this analysis that the Committee's proposed 10 ppb PEL will substantially reduce the risk to worker health, that it is feasible, and that it is cost-effective.

B. Construction Industry

(i) Downstream Application of MDA in the Construction Industry

(*a*) *Executive Summary—(1) Background.* There is potential for employee exposure to MDA when applying MDA-containing coatings to steel, concrete and other surfaces. Making a series of reasonable assumptions in the absence of much quantitative data, the Committee estimated that some 66 firms, each employing 6 workers, engage in the application of MDA-containing coatings, resulting in an estimate of a potentially exposed population of 400 workers. The Committee also used reasonable assumptions to estimate that some 0.5 cases of cancer would occur as a result of each year of exposure in this population. These cancers would be averted by implementation of the recommended standard.

The Committee estimated the likely costs of compliance with the standard as $355,428/year for the entire industry, so that the cost per cancer averted would be approximately $696,918.

(*b*) *Industry Profile—(1) Painters* (A) *Use.* Industrial and commercial painters are potentially exposed to MDA during the application of MDA-containing paints or other coatings such as epoxy or polyurethane coating products. These products may be applied to coat surfaces exposed to corrosive marine and industrial conditions, such as components of offshore platforms in the petroleum industry or pipes, tanks or other process equipment in the chemical industry. MDA-containing coatings can also be used as floor coatings where special abrasion or chemical resistance are needed, and they are commonly used as paints in the nuclear power industry. MDA is only one of several aromatic amines which may be a component of such specialized coating products.

The Committee obtained information indicating that some 200,000 lbs of MDA are used in paints and coatings per year, and that the downstream products contain approximately 10–30% MDA by weight. Information concerning the number of employers or employees using MDA-containing coatings was unavailable.

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[4] Paul MacAvoy has used a discount rate of 2 percent in a similar analysis. Moreover, an OMB directive to use a 10-percent rate was issued early in 1981, when rates of return on investments approached 20-percent. Current rates of return are much lower.

(B) *Process Description.* MDA is typically used as an intermediate or curing (hardening) agent in paints and other coatings. The coatings are typically applied by spray or roll-on methods. Spray techniques may be airless or air spray methods, with the latter reportedly generating as much as 40% of the material in the form of mist or overspray (i.e., paint which does not effectively adhere to the surface) and may become an airborne hazard). After application, the MDA contained in the coating products is chemically changed during the curing process, but the Committee could find no data describing the rate at which such chemical change takes place under different conditions, and hence the rate at which the MDA would become toxicologically unimportant. The information available to the Committee is very scant, but it suggests that 40% of all epoxy-type paints (which include MDA-containing coatings) are applied with spray methods, while the remaining 60% is applied by the roll-on method.

One manufacturer of an MDA-cured epoxy concrete coating ships the MDA in a screw-top container into which the liquid resin is poured. Mixing thus occurs in the same vessel in which the MDA is shipped, reducing dusting and worker exposure. Most of the MDA is not shipped in this type of container, however. In both mixing and application activities the potential for worker MDA in construction activities may be significant, although very little information is available to describe the levels of exposure to which these downstream users might be exposed or the number of workers who may be affected.

(C) *Populations Exposed and Expected Levels of Exposure.* The Committee was only able to obtain a few scant reports describing MDA exposure in the construction industry. A 1974 report indicated that 300 workers were directly exposed to MDA over an 18-month period while applying epoxy coating to concrete walls at a nuclear power plant construction site. There were 4,000 construction workers at the site during the period.

At another construction site visited by NIOSH, a worker mixing an MDA-cured epoxy coating wore a disposable face mask, rubber gloves with cotton linings, and work clothes. Testing of the linings of the gloves showed MDA present after 2 hours use. The investigators speculated that the inside contamination was due to the workers removing and putting gloves back on during work hours.

Two incidents have been reported involving the exposure of workers to MDA during the curing of epoxy resins used as coatings. In one report, 6 workers out of a total work force of 300 men who applied epoxy resins containing MDA to concrete walls developed clinical hepatitis with elevated transaminase levels 2 days to 2 weeks after starting work. MDA was mixed with liquid epoxide at the work site and applied to walls with trowels or a spray gun.

Aside from these reports, the Committee was unable to gather any data except that concerning the number of painters using MDA-containing coatings, or the number or size of firms which might be engaged in the application of such coatings. However, for the purposes of estimating costs, risks and benefits, the Committee made a number of reasonable assumptions in order to estimate the number of potentially exposed employees. These assumptions are based on the amount of MDA which reportedly goes into paints and coatings, the rate (lbs/hr) of paint application under spray and roll-on conditions, and the average hours of work of a typical painter. Assuming that 200,000 lbs of MDA are used yearly in, coatings, and that it constitutes 20% by weight of the final product, the Committee estimated that one million pounds of MDA-containing coatings are applied each year. Estimates provided to the Committee by the International Brotherhood of Painters and Allied Trades suggest that the average application rate of spray methods is 20 lbs/hr, while that for the roll-on methods is 30 lbs/hr. The Committee combined these estimates with the assumption that a typical painter spends only four hours/day painting, with the rest of the time taken up by preparation, set-up and clean-up of work areas. The Committee further assumed, in the absence of any available data, that a typical painter would spend only 10% of his work time (25 days) each year using MDA-containing coatings. The result of these assumptions is that a typical painter would spend some 100 hours/year applying MDA coatings.

For spray applications, each painter would thus consume 2000 lbs/yr; and for roll on application, 3000 lbs/yr. Since an estimated 400,000 lbs of MDA paint are consumed each year in spray operations and 600,000 lbs in roll-on operations, the sum of these assumptions yields an estimate of 200 potentially exposed workers (400,000 lbs/yr divided by 2000 lbs/worker year) in spray operations and 200 workers (600,000 lbs/year divided by 3000 lbs/worker-year) in roll-on applications. These estimates are obviously tenuous, but the Committee considers them a reasonable basis to estimate costs, risks, and benefits.

The Committee did not have available any information regarding levels of exposure to MDA in the painting trades. It is clear, however, that both spray and roll-on application methods entail risk of airborne and dermal exposure. Spray applications, in the view of the Committee, are especially likely to pose potentially serious hazards. In addition, the Committee is aware of two reported cases involving acute hepatitis after application of MDA-containing coating products, and sources in the scientific literature and at least one trade union have reported that skin problems are common among painters using epoxy paints. The latter reports confirm the common occurrence of dermal exposures, and thus the potential for skin absorption of MDA.

For the purpose of risk estimation in spray operations, the Committee assumed that TWA airborne levels of exposure to MDA could reasonably be estimated to be similar to those experienced by maintenance workers, or 0.25 mg/cm^2-hr at 250 ppb (2 mg/m^3 . Dermal exposure levels were also assumed to be comparable to those of maintenance workers, or 0.25 mg/cm^2-hr for the palms and 0.027 mg/cm^2-hr for the forearms and upper body. For roll-on applications, it is reasonable to assume lower levels of both airborne and dermal exposures. The Committee estimated that airborne and dermal exposures would be comparable to those estimated for the polyurethane curing sector, or 0.160 mg/m^3 (airborne), 0.25 mg/cm^2-hr for the palms, and 0.0006 mg/cm^2-hr for the forearms and upper body.

(D) *Additional Controls Needed to Comply With the Proposed Exposure Levels.* The Committee is of the opinion that engineering controls may sometimes be applicable to help reduce the levels of airborne exposure to MDA, but that personal protective equipment will be the principal mechanism to protect painters from exposure to MDA. For spray applications, a painter would typically be required to wear a coated and complete protective garment over his/her coveralls with hood and boots, gloves, and a powered air-purifying respirator. For roll-on applications, a painter would typically be required to wear a partial-coverage disposable protective garment (e.g., an apron) (protective for spills), goggles, gloves and possibly a half-mask respirator.

The Committee assumed, for purposes of assessing risk, that these protective ensembles together with some use of engineering controls would entirely eliminate MDA exposures.

(E) Exposure Profile. The Committee has estimated that 400 workers are exposed to MDA-containing paints and coatings, 200 in spray applications and 200 in roll-on applications. Based on the limited data available, an average of 6 painters per employer or firm was assumed. The total number of potentially affected firms would thus be approximately 66 (400 workers/6 workers per firm). Spray applications were assumed to entail higher exposure, both airborne and dermally, than roll-on applications. Data describing exposure levels, number of employers, or number of employees were not available to the Committee, so that the exposure profiles were constructed with the use of reasonable assumptions.

(F) Production, Consumption, and Capacity. ICF estimates that approximately 200,000 pounds of MDA are produced and used annually for coating purposes. The exact number of facilities producing coatings is not known but at least three facilities have furnished product or process information. The number of firms that apply MDA-containing coatings was also unavailable to the Committee, which chose to use the assumptions described above.

(c) *Benefits Summary—(1) Introduction.* In this chapter, the Committee estimates the potential benefits (in terms of deaths avoided) accruing as a result of its recommendations for a proposed standard for the Construction Industry. The analysis of this section demonstrates that as a result of the recommendations being made by the Committee approximately 0.4 painters applying MDA containing coatings through spray applications and 0.11 painters applying MDA containing coatings through roll-on applications will be saved for every year of reduced exposure by establishing a permissible exposure limit of 10 ppb and reducing to the extent feasible dermal absorption of MDA. A significant proportion of the estimated lives saved are the result of the reduction in dermal exposure, whereas the reduction in airborne exposure levels makes a much smaller contribution to the reduction in risk.

While the Committee was able to estimate the benefits from reducing the risks due to occupational cancer, it was unable to quantify the effects that the recommended standard provisions would have on reducing other occupational risks resulting from MDA exposure (e.g., reduced incidence of dermatitis, liver toxicity, etc.).

(2) Background. The purpose of any proposed standard reducing exposure to MDA is to prevent or reduce the adverse health impacts of exposure to this substance in the workplace. Quantitative estimates of the benefits of the alternative exposure limits of MDA exposure are presented in this chapter, and their implications for regulatory policy are discussed.

The analysis used by the Committee relies on the dose response relationship derived from animal data supplied by the NTP bioassay, coupled with reasonable estimates of human exposure levels. These two parameters, together with assumptions about a number of human absorption parameters, were used to generate quantitative estimates of the reduction in cancer risks associated with MDA exposure under the previously defined regulatory scenarios (i.e. reduced skin contact and PELs of 20, 10, and 1 ppb). Quantitative estimates of the benefits achieved by reducing the incidence of other toxic effects (liver disease and dermatitis) could not be generated, due to a lack of applicable dose-response models.

(3) Benefits Assessment Methodology. The calculations of the cancer risks experienced by workers exposed to MDA while applying coatings and of the benefits associated with reducing exposure were performed using the methods described by the Committee in section IV.

The Committee recommended that OSHA use Table 49 in making risk estimates and also as the basis for making benefit determinations. For a complete discussion of the recommended table and the underlying assumptions, see section IV entitled Risk Assessment.

Data from the NTP bioassay were used to derive dose-response parameters for tumor induction using a "one hit" version of a standard multistage model, which provided the best fit to the data. Pooled-tumor data were used. The assumptions used to estimate dose-response parameters differed from OSHA's analysis in the following respects, however:

Doses were calculated using a body weight rather than surface area conversion factor for adjusting animal doses to human equivalent doses. The "k" value which was ultimately used in calculating worker risks took the value of 0.770 (mg/kg-day)-1.

Risks were calculated using the following equation:

$R=1\text{-}e\text{-}LADD(k)$

where R is the lifetime incremental risk of cancer calculated for a population receiving a lifetime average daily dose (LADD) of MDA, with k being the dose-response parameter just discussed (0.770). Lifetime average daily doses were calculated as follows:

$$\frac{\text{LADD} = (\text{DI} + \text{DP} + \text{DH} + \text{DB}) \,.\, d \,.\, 1 \,.\, l}{y\ L\ w}$$

where, DI, DP, DH, and DB are the daily doses associated with inhalation and dermal exposure to workers' palms, hands and forearms, and upper bodies, respectively. The d/y term is the average days per year of exposure, L is the workers' life expectancy measured from the earliest possible age at first exposure. Risks were calculated assuming one year's exposure and a post-exposure lifespan of 54 years (first exposure at age 20); W is the average body weight of the exposed workers (70 kg). Daily doses were calculated as followed:

$D_I=TWA \,.\, I_I \,.\, BR \,.\, T,$
$D_p=DR_P \,.\, A_P \,.\, I_P \,.\, T^2,$
$D_H=DR_H \,.\, A_H \,.\, I_H \,.\, T^2,$
$D_U=DR_B \,.\, A_B \,.\, I_b \,.\, T^2.$

with the variables defined as:

TWA=time-weighted average air exposure level
BR=on-the-job breathing rate (1.2 m^3/hr)
T=hours of exposure per day (assumed to be equal for all routes of exposure within a given industry)
I_I=inhalation intake factor (=0.5)
I_p, I_H, I_B=dermal intake factors for palms, hands, forearms, and upper body, respectively (all equal to 0.02 hr^{-1})
A_P, A_H, A_B=Area of workers' palms (410 cm^2), hands and forearms (2,830 cm^2), and upper bodies (9,280 cm^2) exposed to MDA.
DR_P, DR_H DR_B=MDA dermal deposition rates for palms, hands and upper body.

Time-weighted average airborne MDA levels and the number days per year of exposure were estimated for the baseline case (no MDA regulation) based on reasonable assumptions which are described elsewhere in this document. No data were available to substantiate the assumptions, however. Based on NIOSH data analyzed by EPA, dermal deposition rates for the spray operations were assumed to be comparable to that of maintenance workers in general industry. These rates would thus be: palm, 0.25 mg/cm^2-hr; forearms and upper body, 0.027 mg/cu^2-hr. For dermal exposure in roll-on applications the Committee assumed deposition rates of: palms, 0.25 mg/c^2-hr; forearms and upper body, 0.0006 mg/cm^2-hr.

It was also assumed that workers, if exposed dermally for more than four hours per day, would wash their hands and forearms after four hours (e.g., before lunch), and skin deposition would begin again on those surfaces from a level of zero. For cases where the standard was in place (all proposed PELs), we assumed that the dermal protection strategy would completely eliminate exposure.

Individual cancer risks were calculated assuming one year's exposure at the levels specified in each of the cases analyzed. Population cancer risks for one year of exposure were estimated by multiplying the predicted individual risk values for one year of exposure by the estimated number of workers exposed in each of the mode of coatings applications. The final population risk values therefore correspond to the total number of cases of cancer associated with MDA exposures during one year of operation for this industry sector.

(4) Results of Cancer Risk Analysis. The results of the Committee's analysis of cancer risks associated with exposure to MDA among painters are summarized in Exhibit A (Benefit Summary for MDA Standards for Painters). Column 1 in the Table has identifying entries for the baseline level (current conditions) and for the regulated case (any PEL), and assumes that airborne exposures will be reduced to zero at all PELs through the use of respiratory protection. The input data and the resulting risk calculations for spray and roll-on applications (at all PELs) can be read from left to right from the entries in the Table. Columns 2–14 reflect input data regarding airborne and dermal exposure. Columns 15–17 indicate the dermal deposition rates discussed above. Columns 18–21 reflect the lifetime average daily doses for inhalation, palm, forearms and upper body respectively. Column 22 is the estimated lifetime average total dose. Column 23 is the MDA cancer dose response (slope) parameter, also discussed above.

Column 24 is the calculated individual cancer risk per year of exposure which, when multiplied by the number of workers exposed in each industry (Column 25) yields the number of cases of cancer expected from each year of industry operations. Finally, Column 27 reflects the marginal benefit (cases of cancer prevented per hundred workers) when going from baseline conditions to a PEL of zero.

The total cancer risks associated with a single year's exposure to MDA among painters under current baseline conditions are approximately 0.5 cases in a population of 400 painters. The benefits would have the same magnitude.

Most of the benefits estimated, even for spray applications which entail high levels of airborne exposure, are the result of the estimated reduction in dermal exposures. This is true at any PEL, and it is the case because the model utilized effectively postulates that much of the risk results from the dermal doses of MDA experienced by the workers.

Since much of the dermal dose is effectively eliminated with the imposition of the requirements of any alternative standard, it is reasonable that most of the benefits accruing from the standard result from the imposition of these requirements. Under the assumption that respirators would eliminate all airborne exposures at any selected PEL, the reductions in MDA doses resulting from reductions in the PEL to 10 ppb or 1 ppb would not contribute measurably in terms of additional reduced cancers.

*(d) Technological Feasibility—(1) Introduction.*This chapter assesses the technological feasibility of reducing worker exposure to MDA in the Construction Industry to the alternative levels under consideration and provides the basis for estimating the engineering control costs calculated in Chapter V (compliance costs). This assessment of technological feasibility is based on information collected by the MDA Mediated Rulemaking Committee which provides information on the current exposure levels resulting from existing controls, and on the availability of controls needed to reduce exposures from current levels. This information was compiled from the data from the International Brotherhood of Painters and Carpenters Union and through assistance from ICF incorporated.

(2) Technological Feasibility of Engineering Controls—(A) Painters Applying MDA-Containing Coatings Through Spray Techniques. This section assesses the technological feasibility of achieving the alternative levels. The Committee has reviewed the technological feasibility and believes that while it may be feasible in some instances to use local or general exhaust ventilation to reduce exposures, these controls alone will not provide adequate protection for painters. These controls in conjunction with the use of respiratory protection will be necessary to ensure that workers applying paints through a spray technique are adequately protected. In many instances, the Committee believes that it will not be feasible to use local or general exhaust ventilation, and in these cases only respiratory protection will be used. The Committee recognizes that many coating applications in the Construction Industry will be to concrete structures, pipes, flooring etc. These surfaces may be located inside or outside of buildings but are usually outdoors. It is often times difficult to use traditional control technologies in these instances. However, the Committee acknowledges that some of these construction activities may be conducted inside of facilities or perhaps in confined spaces (e.g., tanks, pipes). In these instances, the Committee expects that the employer will provide the usual and necessary engineering controls in addition to the necessary respiratory protection. The Committee also recognizes that the use of engineering controls in these instances is mandated by existing OSHA regulations (e.g. confined spaces, spray painting).

For purposes of feasibility, the Committee believes that compliance will be achieved primarily through the use of the appropriate respiratory equipment and not through the use of engineering controls.

Based on the analysis discussed above, the Committee recommends that the following preliminary determination of feasibility in these sectors be used by OSHA:

1. It is technologically feasible for the painters applying MDA-containing coatings to achieve compliance with a PEL of 1 ppb or less through the use of the appropriate respiratory protective equipment. It is also considered feasible to eliminate dermal exposure by the use of appropriate personal protective equipment and clothing.

(e) Costs of Compliance—(1) Introduction. This chapter presents estimates of the compliance costs that would be incurred by employers in the Construction Industry subsequent to the promulgation of any of the following regulatory alternatives for MDA: permissible exposure limit (PEL) of 20 parts per billion (0.160 mg/m^3), with an action level of 10 ppb, PEL of 10 parts per billion (0.08 mg/m^3), with an action level of 5 parts per billion; and PEL of 1 part per billion (0.008 mg/m^3) and an action level of 0.5 parts per billion. The first section of this chapter describes the rationale, the methodology and the data sources for the cost of compliance analysis. The second section provides the provision-by-provision estimates for the Construction Industry. The final section summarizes the costs of compliance.

Under the assumptions of this analysis, the costs to achieve all PELs would be the result of the use of personal protective equipment, hygiene measures, education and other measures. The costs of engineering controls are not included in the analysis, since such controls would only occasionally be applied. The total estimated cost of compliance is $355,428/year for the entire sector.

(2) Methodology of Cost Estimates. Overall compliance costs were developed for this "downstream" industry sector by estimating the costs of thirteen different elements of compliance which would be triggered by the imposition of the recommended standard for construction. Both capital costs and yearly operation and maintenance costs were included in the estimates. Annualized capital costs were estimated assuming that the life of the equipment would be 10 years. Costs were estimated for an assumed 35 firms engaged to some degree in spray applications, and for another 33 firms engaged in roll-on applications. The number of firms was a Committee estimate, without any quantitative supporting evidence. The cost analysis also assumed that the same set of measures (and the same costs) would serve to comply with any of the alternative PELs.

Acceptable data were nearly always unavailable to estimate the parameters which formed an element of cost compliance. The need for mandatory showers, for example, is triggered by exposure above the action level or the potential of dermal exposure, yet the number of workers meeting such criteria in a typical firm could only be roughly estimated. To account for this type of uncertainty, the Committee consistently adopted reasonable worst-case scenarios when evaluating compliance costs.

The thirteen elements of compliance cost are: (1) engineering controls, (2) exposure monitoring, (3) regulated areas, (4) respirators, (5) emergency planning, (6) protective clothing and equipment, (7) housekeeping, (8) hygiene facilities and practices, (9) medical surveillance, (10) employee information and training, (11) labels, (12) recordkeeping and (13) medical removal protection benefits. Likewise, we also assumed that engineering controls and respiratory protection would be the preferred methods of achieving the PEL levels.

The cost estimates for achieving compliance with the alternative PELs were developed for 8-hour time-weighted average (TWA) exposures. Separate estimates of the costs to achieve compliance with short-term exposure levels such as 15-minute or peak exposures have not been developed for this report. As discussed previously, the Committee believes that the same engineering controls and work practices that will reduce exposures to below the 10 ppb PEL would also reduce the shorter exposures.

(3) Costs of Compliance for Reducing Exposures and Meeting the PEL

Cost of Engineering Controls. Two types of engineering controls were found to be potentially appropriate for reducing exposures to MDA in the industries examined. These are:

portable local exhaust ventilation
  systems equipped with HEPA filter
  dust collection systems
general ventilation systems

The dearth of process and use information about MDA-containing coatings did not permit the Committee to define a set of representative engineering controls for a typical job, or to make a corresponding cost estimate. However, the Committee considers it reasonable to assume that whenever engineering control methods are applied, the costs for respirators and protective clothing would be reduced in a proportional manner.

Cost of Exposure Monitoring. The exposure monitoring requirements of the recommended MDA standard would include the following elements:

All employers must perform initial monitoring, representing full-shift exposure, for each shift for each job classification in each work area where there may be employee exposures to MDA. If the employer can document that exposure levels are equivalent for similar operations in different work shifts, exposure may be determined for that operation for only one shift. If initial measurements of MDA exposure show employee exposures below the action level, monitoring for those employees may be discontinued, unless the process changes. If initial monitoring shows employee exposure above the action level but below the permissible exposure level (PEL), monitoring must be repeated at least every six months for those employees. Monitoring may be discontinued for employees for whom two consecutive measurements, taken at least seven days apart, show exposures below the action level. If initial monitoring shows employee exposure above the PEL, monitoring must be repeated at least every three months. The monitoring schedule may be changed to every six months for any employee for whom two consecutive measurements, taken at least seven days apart, indicate exposure at or below the PEL.

Costs of monitoring requirements were estimated only for air monitoring since the Committee agreed not to require urinary monitoring. To collect personal air samples, air is drawn through a sulfuric acid treated glass fiber filter at a rate of two liters per minute using a portable sampling pump attached to the worker's belt. Eight-hour samples are taken. The samples are analyzed by high pressure liquid chromatography (HPLC).

The only capital cost is the cost of a portable sampling pump, $608. We assumed that on the average each firm would need one pump; only one employee could be monitored per day. In the absence of any available data, the Committee assumed that painting firms already have the appropriate monitoring pumps.

Some companies might not choose to buy pumps, but might instead have a contractor or insurance company carry out the required monitoring; we have not included the cost of this option in our estimates.

We assumed that samples would be analyzed by outside laboratories at a cost of $58/sample (cost of acid-treated glass fiber filters and sample cassettes for personal air samples is included with analytical costs). It is possible that large firms might do their own analyses; we have not estimated costs for in-house analysis. In addition, there is a cost for a person to conduct the monitoring of $64/sample (2 hours of a professional worker's time at $32.00 per hour).

The Committee agreed that for the estimation of annualized costs, the average lifetime of a sampling pump is 5 years. This assumption was based on the personal experience drawn from routine use of this sampling equipment by several Committee participants.

The recommended standard would also include a cost for employee notification of monitoring results. Approximately 1 hour of secretarial time per year would be needed to type and post monitoring results and to document that exposure levels are similar for operations in different work shifts. Therefore, at an average secretarial wage of $6.62 per hour, the annual notification cost per firm would be $6.62.

In addition, the Committee estimated that dermal exposure monitoring as recommended by the standard would require 30 minutes of secretarial time per year to report findings and solutions. The average secretarial wage of $6.62 is assumed with an annual cost per firm of $3.31.

The number of job classifications for which there is potential employee exposure to MDA is used to estimate monitoring costs per facility. For this industry sector, the Committee assumed that one employee, reflecting one job classification, would be monitored by each firm, with the frequency of sampling determined by the measured MDA level. We assumed that exposure levels would be similar for the same job classifications in different shifts and, therefore, that monitoring would need be done during only one shift.

Cost of Regulated Areas. This provision requires that employers establish regulated areas where exposure to MDA is likely to occur. The regulated areas and entrances to regulated areas must be demarcated with signs which limit access to authorized persons only. Signs will include a combination of phrases such as the following:

- Danger: 4,4'-Methylenedianiline
- Regulated Area: Authorized Personnel Only
- Protective Clothing Required
- Wear Your Respirator
- Goggles Must be Worn at all times

Regulated areas are not just those areas exceeding the PEL, but also include areas where personal protective equipment is required to prevent dermal exposure to MDA. The average cost of a regulated area arises from the necessity of purchasing 3 signs at a cost of $8.20 per sign, and a 1000 foot roll of caution tape at a cost of 44.84 per roll. This would make the total cost per regulated area $64.44 per firm. The Committee assumed, in the absence of any quantitative data, that each of the estimated 66 firms would carry out 10 jobs/year, and that,each job would entail setting up a regulated area. We have assumed that the use of regulated areas will not result in losses of productivity or other increases in production costs.

Cost of Respirators. The selection of an appropriate respirator depends upon the expected exposure level as compared to a given PEL. Three main types of respirators can be used to satisfy the requirements of the recommended standard:

≤ 10 x PEL: Half Mask Air-Purifying Respirator with HEPA cartridges ($18.38 each).

≤ 50 x PEL: Full-Face Mask Air-Purifying Respirator with HEPA Cartridge ($139.92 each).

≤ 1000 x PEL: Powered, full-facepiece Air-Purifying respirator with HEPA Cartridge ($336.00 each).

The Table recommended by the Committee has three other categories of respirator use:

> 1000 x PEL: Self contained breathing apparatus (pressure-demand) ($1300 each) or full facepiece positive pressure or pressure-demand supplied-air respirator with auxiliary self-contained escape air supply (price varies depending on the source of air supply).

Escape from unknown concentrations: Any full facepiece air-purifying respirator with HEPA cartridges ($139.92 each)

Firefighting: Full facepiece self-contained breathing apparatus in positive pressure mode.

In the Committee's view, respirator use will be restricted to the following situations:

(1) During the time period necessary to install or implement feasible engineering and work practice controls. The Committee agrees with OSHA's experience that most firms install engineering controls prior to the effective dates of the proposed regulations in order to avoid spending additional monies on interim remedies (respirators). Thus this requirement would be assumed to have no cost when engineering controls are feasible, which is seldom the case in painting operations.

(2) In work operations for which the employer has established that engineering and work practice controls to reduce exposure to or below the PEL are not feasible. The Committee has agreed that this will be the case for most painting operations.

(3) In emergencies: The Committee did not estimate a cost for this recommendation.

The Committee decided to adopt the current OSHA practices with respect to respirator use, maintenance, etc., and not to make recommendations inconsistent with current policy. The Committee recognized that OSHA is currently revising its respiratory protection standards and thus decided to recommend that OSHA modify the respirator protection provisions made by the Committee to achieve consistency with future revised OSHA regulations. If the MDA rule is published prior to the revision of the respirator rule. OSHA estimates that the cost-per-employee using a respirator would average $121.00 during the first year and $68.00 during the following years. If the new respiratory protection standards are promulgated before the MDA rule becomes final, the cost per employee using a respirator would increase to $242.00 during the first year and $145 during the following years. These cost estimates would cover all expenses (e.g. written procedures, inspections, cleaning and maintenance and storage of respirators). The costs of fit testing are not included in these estimates but are provided separately.

In addition to the annual cost of a respirator, the cost for HEPA cartridges at $7.84 a pair must be included. HEPA filters will be used because they provide respiratory protection against dusts, fumes, and mists with a permissible exposure limit of 0.01 mg/m^3 or less. Cartridges must be replaced daily. Each employee exposed to concentrations greater than the PEL will have his/her own respirator.

There would be no cost associated with a recommended provision for washing the face and adjusting the respirator if workers are currently required to wear respiratory protection, since the costs of allowing employees to wash faces are already required under 1910.134. However, if workers are required to wear respirators as a result of this proposed regulation the associated costs would include; 2 times a day (5 minutes each) of lost work time at an hourly compensation rate of $11.43 or $1.90 per hour per worker per day required to wear a respirator.

The Committee would recommend a requirement for initial and annual fit testing. Qualitative or quantitative fit testing would be acceptable provided the protocol outlined in Appendix E is used.

A 1986 report on respiratory fit testing indicates that qualitative fit testing is the method most employers will choose. OSHA has estimated that 30 minutes of lost work time will be required for each employee tested. In addition, 1.25 hours of instructors time will be required. The estimated compensation for an instructor will be $16.00 per hour and that of a production worker would be $11.43 per hour. The total cost per session per employee would be $25.72 per worker fit tested. This would be the cost of the initial fit test and the annual fit test. These estimates do not include any costs for additional tests which may be required.

Cost of Emergency Planning. The Committee recommends that a written plan for emergency situations be required for each workplace. This plan should meet the requirements specified under 29 CFR 1910.38 "Employee Emergency Plans and Fire Prevention Plans." Facilities already covered by 29 CFR 1910.38 should have such plans in effect. Facilities manufacturing, using, or otherwise handling MDA will incur costs in preparing an MDA-specific addendum to the current emergency plan. We estimate that two hours of supervisory time at $32/hour would be necessary to develop this addendum to the emergency plan, and one hour of clerical time at $6.62/hr would be needed to type up the addendum. This addition to the emergency plan would be presented to the employees as part of the already required information and training program. The total cost for emergency planning is $71.00 per facility for the first year. Following year costs for updating are estimated to be one half the first year costs.

The Committee also recommends the requirement that employees engaged in emergencies have the appropriate personal protective equipment and clothing. We assumed no costs for this provision because it is already required by section 1910.38. The Committee also recommends that a means of alerting employees during emergencies be provided. There are no estimated costs for this provision since it is already required in section 1910.38.

Cost of Protective Clothing and Equipment. Two sets of personal protective equipment have been defined which, in the Committee's judgment, would be used by firms if an OSHA standard were proposed requiring the prevention of most dermal exposures resulting from direct contact with MDA except for particulates, gases, or vapors. Each employee potentially exposed to MDA would have to be supplied this equipment for each day MDA is handled. The costs for protective clothing and equipment were estimated from the sets of equipment described below and combined with estimates of required usage for a typical firm in this industry sector. The cost of typical equipment already provided in the sector was subtracted from the total estimate. The Committee assumed that painters are now provided coveralls by their employers. The two sets of protective clothing, and the requirements for their use, are as follows:

(1) Roll-on Applications
  Work coveralls
  PVC or natural latex gloves (changed every two hours).
  PVC or latex apron (changed daily).
  PVC or latex shoe covers (changed daily).
  Chemical splash goggles (annually).
(2) Painters—Spray
  PVC or latex gloves (changed every two hours).
  Polyethylene coated Tyvek disposable coveralls with attached hood, boots, and elastic wrists each (changed daily).

The Committee recommends specific requirements for in-house or off-site laundering of MDA contaminated clothing. The only additional cost imposed by the laundering requirement involves the labelling of containers with contaminated clothing. Labels are estimated to cost approximately $0.33 each, and the Committee assumes that a firm will need to label an average of 5 containers per week of MDA work, for an average weekly cost of $1.65/facility/week. Each firm is assumed to conduct five weeks of MDA work per year. There are no other labelling costs in that these costs would be attributable to the Hazard Communication standards.

Cost of Housekeeping. The Committee recommends a requirement that all surfaces be maintained as free as practicable of visible accumulations of MDA capable of becoming airborne and/or otherwise resulting in airborne or dermal worker exposure. Since it is reasonable to assume that at the end of each workday there would be little or no unreacted MDA, the Committee estimates that the only housekeeping cost would be for a plastic, labelled bag to dispose of contaminated clothing articles or tools, at a daily cost per job of $1.58. Finally, the recommended language for waste disposal is consistent with the requirements in 29 CFR 1910.141 and as such no costs of compliance are estimated.

Cost of Hygiene Facilities and Practices. The recommended standard requires change areas with separate storage for work and street clothing. This is already required by 1910.141 provided the employer supplies protective clothing or equipment. The Committee believes that, as in the case of general industry, the Construction Industry currently complies with this requirement. The Committee believes this to be correct, in that most of the work places handle a variety of toxic substances which require the use of personal protective equipment and thus proper change rooms.

The recommendations require that employees exposed above the action level to dusts or vapors of MDA shower at the end of the work shift.

Both capital and O&M costs could be incurred for shower facilities. Capital costs for showers are based on one portable shower per firm at an estimated cost of $2,000 per shower, annualized (on a 10-year basis) to $324/firm.

Operation and maintenance are estimated on the basis of one-half hour/day paid time for a mandatory shower at the end of the work shift. Based on an average wage of $11.43/hour, the cost for mandatory showers is $5.72/employee for each day of MDA operation.

Shower facilities would have to comply with 1910.141(d)(3) which requires soap, hot and cold running water, towels, and an attendant. It is also assumed that the costs to operate a shower would be $0.68/shower/worker per 6 minute shower based on an estimated water usage of 20 gallons/shower at 90° F. The Committee also assumed that the existing employee training program could be used to inform the employees of the mandatory shower requirement. The recommendations would require that employees who must shower remove protective clothing and equipment before leaving the workplace. No additional costs will be incurred as a result of this requirement since additional time to perform this task has been allowed in the time necessary to take a shower.

The recommendations would require that employees exposed to any spills of MDA remove spilled material from skin immediately. The Committee estimates that approximately 5 minutes is needed to wash thoroughly after a spill. Based on an average employee wage of $11.43, the estimated cost for time lost would be $0.95 per washing. The Committee also estimates that approximately 1 spill per job will occur. Therefore, this provision will cost an estimated $627 for the entire industry.

Whenever food or beverages are consumed at the worksite and employees are exposed to MDA, the recommendations would require that the employer provide lunch areas where MDA levels are below the action level and where eating surfaces are free of MDA accumulations. Section 1910.141 already prohibits the consumption of food or beverages in any area exposed to a toxic substance. In addition, it is reasonable to assume that most medium-size construction contractors handling MDA would already provide separate lunch rooms or other provisions for consumption of meals in non MDA areas. This assumption is greatly aided by the limited nature of most MDA operations. Very few, if any, construction sites, would be entirely dedicated to MDA use. For this reason, no additional costs were estimated for the provision regarding clean lunch areas in this industry sector.

The recommendations would require that the employees wash their hands and faces with soap and water prior to eating, drinking, smoking, or applying cosmetics. For cost purposes, it was assumed that employees would wash their hands and faces an estimated three times a day for an average of 2 minutes per break. Based on an average employee wage of $11.43 per hour, the estimated cost per worker for each day of MDA work will be $1.14.

The recommendations would require that employees be prohibited from entering lunch facilities with contaminated protective work clothing or equipment. The Committee estimates that 5 minutes per day would be ample time to comply with the language of this requirement. Therefore, based on an average employee wage of $11.43, the cost of this provision would be $0.95 per worker per day of MDA work.

Cost of Medical Surveillance. The recommendations would require that medical surveillance be provided to all employees exposed to MDA at or above the action level, to all employees exposed more than 15 days per year dermally, and to all employees exposed in an emergency situation or showing signs or symptoms of exposure to MDA.

For costing purposes, the Committee made the conservative assumption that all the workers in the construction sector would be potentially subject to dermal exposure 15 days/year or more, and thus subject to medical surveillance requirements.

In addition, the Committee also estimated that one out of every 1000 workers would require additional medical surveillance under the emergency provision of the recommended standard; and that an additional one out of 1000 workers would require an examination because of signs or symptoms of exposure to MDA.

The initial physical examination is a one-time, non-recurring event for all individuals beginning work in an MDA area at the facility. The annual and emergency examinations would be comparable in content. These procedures would require a general examination that includes a detailed occupational history, skin examination, liver function test and urinalysis. The examination would cost $70/worker. Liver function tests would cost $15.00 per worker and urinalysis testing would cost $7.50 per worker. Since most painting or construction firms do not have health care facilities, cost estimates were prepared assuming that workers would visit a medical facility away from the company. Employee travel time and exam time were estimated to total two hours; lost worktime costs associated with medical surveillance were thus estimated to be $22.86/worker. The total cost of all these components of an examination would be $115.36/worker.

The Committee further assumed that a multiple physician review mechanism would be triggered by emergency MDA exposures or the observation of signs or symptoms of MDA exposure, and the cost of an additional examination by a second physician has been estimated for 1 out of every 1,000 workers.

The recommendations would require that certain information be provided to the physician. The clerical time to collect the information and develop the necessary paper work was estimated to be one-tenth of an hour of clerical time at $6.62 per hour, or $0.62/exam.

The cost of the physician developing his written opinion has been included in the cost of a medical examination. Additional clerical time to receive the physician's written opinion, and transmit the results to the appropriate individuals, make copies, file etc. are assumed to require one-tenth of an hour of clerical time at $6.62/hour, or $0.66/exam.

Throughout this analysis, costs have been estimated based on the assumption that firms will comply fully with the proposed rule. For example, costs have been calculated assuming that all workers exposed to MDA will wash their hands several times a day to ensure cleanliness prior to eating, smoking, or applying cosmetics; workers will always wear the proper protective equipment, and good housekeeping techniques will prevail throughout. For analytical purposes, therefore, the costs of the medical removal provision will be calculated based on the potential for needing to remove workers when firms comply fully.

It is the opinion of OSHA that the costs of this provision will be negligible for those firms complying fully with the proposed standard. If the other provisions of the rule (engineering controls, personal protective equipment, proper emergency procedures, good worker and plant hygiene methods, worker training, etc.) are complied with, workers will rarely, if ever, be exposed to excessive amounts of MDA or show symptoms associated with acute exposure to MDA. In fact, the very existence of a medical removal provision should result in fewer dangerous exposures. The provision creates an economic incentive for employers to provide safe workplaces since firms must either absorb the costs of complying or endure the consequential costs of over exposing an employee. In the past, there was often no economic cost of unduly exposing an employee to MDA.

Careful compliance with the rule therefore, should result in the needed removal of very few employees. The potential for emergencies with MDA is relatively low since MDA is typically used in very small, controlled operations where sudden accidents are unlikely. It was assumed that one worker per 1000 workers exposed to MDA may be involved in an MDA emergency each year. The Committee estimates, on the average, that this worker may need to be removed from the workplace for one month, resulting in a loss of worker productivity of $1030 (20 workdays x 8 hour days x $11.43 average employee wage). After the one month period it was assumed that the worker could return to his/her position or be transferred to a new position at no additional cost.

Costs of Employee Information and Training. The recommended standard for MDA would include a requirement that employers provide employees potentially exposed to MDA with information and training on the hazards of MDA and appropriate handling procedures. The training would be provided at the time of initial assignment and at least annually thereafter. Information provided would include the following:

- An explanation of the content of the proposed standard;
- Briefings about the operations where MDA is present;
- An explanation of the medical surveillance program;
- Methods that may be used to detect MDA in the work area;
- The physical and health hazards of MDA;
- The measures that employees can use to protect themselves from hazards associated with MDA exposure, including specific measures implemented by the employer; and
- An explanation of the labeling system and how employees can obtain and use the appropriate hazard information.

The Hazard Communication standard already requires firms to provide employees with "information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new hazard is introduced into their work area [29 CFR 1910.1200 (h)]. Thus as training is already required under the Hazard Communication rule, the Committee's estimates do not include costs for the first year of training. Most facilities will have an existing training program, but we assumed that this program would not include all the required information about MDA. The cost of employee information and training would be those of adding an MDA component to the training program and of presenting the program annually. These costs would include: (1) The labor cost for a supervisor to add an MDA component to the training program (estimated time: 8 hours); (2) the labor costs for a clerical person to add an MDA component to the training program (estimated time: 30 minutes per facility); (3) The cost of an employee attending the training (one half-hour of employee time per year at an hourly wage of $11.43 per hour, or $5.72 per employee per year); (4) An annual supervisory cost of $16 per supervisor, based on two half-hour presentations per year at an hourly wage of $16 per hour.

Costs of Recordkeeping. The Committee assumes that recordkeeping requirements for a standard regulating MDA will be similar to those for other occupational carcinogens. Estimated costs are based on the need to keep records for 30 years and the following assumptions: Records will be maintained in hardcopy form; the average duration of employment will be 10 years during which records will need to be readily accessible (e.g., in file cabinets); after 10 years have passed, records will be moved to a secure storage area in boxes (it is assumed that these exist for other personnel records); and all recordkeeping will be done in-house.

The costs of recordkeeping are therefore estimated as follows:

- File cabinets, 4-drawer legal size (steelcase model 1700 with locks)—list price $418.
- Floor space required for the file cabinet—2 square feet at $45 per square foot, or $90 per facility.
- File maintenance will be taken care of by a file clerk in addition to his/her normal duties—one hour of clerical work at $6.62/hour.
- Long-term storage of records with other company records—no cost.

Total capital cost is $508 per firm and total operating cost is $6.62/year.

Cost of Substitution for MDA-Containing Paints and Coatings. The Committee did not call any data bearings on the possible substitution of MDA in paints and coatings.

(4) *Cost Estimates for the Construction Industry.* The following sections summarize the estimated costs for meeting the three alternative PELs considered by the Committee [PEL 1: 20 ppb (0.160 mg/m^3), PEL 2: 10 ppb (0.08 mg/m^3). PEL 3: 1 ppb (0.008 mg/m^3)] for the Construction Industry. Since protective equipment will be the principal control method, the estimated compliance costs are the same for the three PELs. Substitution costs are not discussed for the Construction Industry because the Committee concluded that there are no substitutes available for the downstream products used by this sector.

The total annualized average compliance cost of the recommended standard for the painting industry is estimated to be $355,428. In the absence of relevant data the Committee made no effort to estimate costs for representative employers. The following sections discuss the individual cost elements for this industry sector.

Engineering Controls

The Committee assumed no engineering control costs in its estimates, although it is clear that, in some motones, engineering controls such as portable exhaust systems would be available and applicable to reduce exposures.

Exposure Monitoring

The Committee assumed that sampling equipment is already available, and that one of every six workers would be monitored each year, on the average (i.e. one worker per average firm). Sampling and analysis costs would be $122 for each sample, and it is estimated that each firm would sample one of the 10 jobs it completes each year. Each firm would also incur a small cost for notification and reporting of monitorsive would be $8,706/year for the sector.

Regulated Areas

Each painting job would be a regulated area under the recommended standard, requiring an average of three warning signs ($.20/sign) and a 1000-ft. roll of warning tape ($44.84) for a total of 64.44 per job. The Committee assumed that 660 painting jobs would take place each year, for a total estimated cost of $42,530.

Emergency Planning

An estimated 66 firms would have to prepare MDA-specific addenda to their emergency plans. The first year cost would be $4686 ($71/firm) and annual cost thereafter would be half as much, or $2343/yr. for the industry.

Protective Clothing and Equipment

To meet the recommended standard, the Committee concluded that two different ensembles of protective equipment would be required. The more protective ensemble, for spray applications, would consist of disposable polyethylene-coated tyvek suits with hood and boots, and disposable rubber gloves discarded every two hours. The required powered air purifying respirators would provide eye protection. These ensembles would be required for 200 workers, 25 days per year, for a total cost of $48,000. In the case of roll-on applications, the ensemble would be less demanding, and would include goggles, disposable gloves, and disposable, polycoated regular tyvek aprons and hats. These ensembles would also be needed by 200 workers for 25 days per year, for a total annual cost of $14,475. The combined total annual cost for protective equipment is estimated to be $62,475.

Respirators

In spray applications, workers would likely have to wear powered air-purifying respirators. At a unit cost of $336 per PAPR, the total estimated initial cost for the 200 workers engaged in spray applications would be $67,200. Annualized to $10,886. The cartridges in the PAPR's would be daily at a cost of $59,500 ($11.90 per cartridge x 25 days x 200 workers). Assuming that one-half (100) of the workers engaged in roll-on applications would be required to wear half-mask respirators with HEPA cartridges, the costs would be $14,000 for respirators ($140 each) and $2,572). Cartridges would be replaced daily, at a cost of $8,312. ($3.33 per cartridge x 25 days x 100 workers). The total cost for respiratory protective equipment for both spray and roll-on operations would be $95,270.

Housekeeping

Since MDA in coating products is chemically converted upon mixing, the Committee estimated that the only housekeeping costs would be for daily bags for disposal of contaminated clothing ($1.58 bag). For an average job duration of 2.5 days/job, and 660 jobs/year, the total cost would be $2607.

Hygiene Facilities and Practices

The Committee assumed that each employer would have to purchase a portable shower arrangements, with an annualized cost of $324/firm. There would also be expenses for the last-time of personnel taking showers ($5.72 per shower), at an average cost per firm of $858. The cost of operating the shower would be $102/firm. The total hygiene costs for the industry would be $85,384.

Medical Surveillance

Each of the 400 estimated workers potentially exposed to MDA in this industry sector would have to be medically monitored, at a cost of $115.36/exam. In addition, there would be small additional costs for multiple physician review and infrequent medical removals. The total annual cost for medical surveillance in this industry would be $46,922.

Employee Information and Training

The estimated costs of employee training include employee time ($34.32/firm), time to prepare course materials ($16/firm), time to type course materials ($3.31/firm), and supervisory time for the actual training ($16/firm). The total cost for the industry would be $4596 ($69.63/firm-year x 66 firms).

Signs and Labels

The Committee assumed that all labelling costs would fall properly under the authority of the Hazard Communication Standard, and thus no costs were estimated in this category.

Recordkeeping

Assuming a recordkeeping cost per firm of $69.62, the total cost for the industry would be $4594.92.

(vi) Economic Feasibility and Regulatory Flexibility Analysis

In accordance with Executive Order No. 12991 (46 FR 13193, February 19, 1981), OSHA has assessed the potential economic impacts of the proposed MDA standard. The preliminary determination is that the regulatory requirement limiting MDA exposure in the workplace, including PEL levels reduced to 10 ppb, would not result in significant adverse economic impact on any of the industry sectors for which detailed financial and compliance data are available.

Pursuant to the Regulatory Flexibility Act of 1980 (P.L. 96–353, 94 Stat. 1164 [5 U.S.C. 601 et seq.]), consideration has been given to the mitigation of the economic impacts of the proposed standard on small entities. Based on the available data, it is not anticipated that the proposed standard would significantly affect a substantial number of small entities.

The proposed regulations limiting exposure to MDA in the construction industry affects workers in approximately 66 firms. The Committee has conducted a preliminary assessment of the economic impact likely to be experienced by these 66 affected firms and has determined that these are likely to be minimal based on the nature of the applications involved and the probability that these compliance costs will be passed through to the purchasers of their services. The supporting analysis for this finding is presented below, and is based on the same methodology for determining economic impacts used to assess the impact of the proposed regulations on the producers and primary users of MDA.

The annualized compliance costs faced by the affected construction firms will be approximately $5,450. Several factors suggest that these costs will be passed through to the purchasers of the services of these construction firms. Approximately 90% of these costs are variable compliance costs, which implies that if these costs can be passed through to the purchasers of the services of these firms, they will be passed through relatively rapidly. A second and perhaps more important reason why these compliance costs will probably be passed through to the purchasers of these firms' services is that the purchasers are large firms and government entities managing large projects (e.g., chemical plants, reactors, and defense related activities). As such, the incremental costs associated with limiting worker exposure to MDA are likely to be extremely small relative to the economic size of these projects. Furthermore, in many cases, contractual and engineering specifications may require that the MDA-related products be used for their desirable physical properties. In these cases, the incremental compliance cost will certainly be passed through to these purchasers. Given these considerations, it is likely that these compliance costs will be fully passed through in a relatively short period of time.

If these compliance costs are passed through to purchasers of these firms; services, the increase in the price of these services is likely to be extremely small. First, the annual compliance costs are quite low per firm, and constitute an even smaller portion of the costs of the activities of these firms. That is, compliance costs of several thousand dollars per year are quite low when compared to these firms' labor costs—on the order of tens of thousands of dollars per year per worker—and relative to the total costs of the construction services provided. Thus, it is unlikely that the price increase that may result from the proposed regulations will be large, so that no plant closures or employment contractions will result.

Finally, if the compliance costs are not passed through to the purchasers of the services of these affected firms, given the size of the incremental costs, it is highly unlikely that these costs would pose a significant burden to the firms involved. Relative to the workers and other costs of construction activities affected by the proposed regulations, the incremental compliance costs of $5,450 per firm are extremely small. Thus, it is unlikely that any significant economic impact will arise from the proposed regulations even if the compliance costs are not passed through to the purchasers of these firms' services.

Based on these considerations the Committee concluded that the proposed regulations will not cause significant economic impacts to the affected construction firms because the compliance costs are small relative to the economic size of the affected firms and the activities into which these construction services are inputs.

(vii) Summary and Explanation for a Standard for General Industry

Paragraph (a)—Scope and Application

(a)(1) The Committee's recommended general industry standard would apply to all "occupational exposures" to MDA with the specific exceptions set forth in the scope and application section and would apply to all workplaces in all industries, except for construction, where MDA is produced, released, stored, handled, used or transported, and over which OSHA has jurisdiction.

The Committee proposes to develop a separate standard regulating the construction industry. The two standards, general industry and construction, would, however, cover all industries covered by the Act. The general industry standard covers all activities and operations including ship repair and rebuilding, manufacturing, secondary processing, and downstream use of MDA. Employees of the Construction Industry are covered by the construction standard. Construction activities are defined in 29 CFR 1910.12(b) as work for construction, alteration and/or repair, including painting and decorating.

As noted above, ship repair and shipbreaking activities are covered by the general industry standard. The Committee believes the provisions of the general industry standard are appropriate for the operations involving MDA which will occur on ships.

There was considerable discussion concerning the adoption of this recommendation by the Committee. Initially, the industry representatives recommended that the construction industry be excluded from the MDA proposed rule, pointing to the unique characteristics of this industry. The unique characteristics of the construction industry were noted in the asbestos standard:

". . . the variable nature of construction work activities, the lack of a regular workplace for many construction employees, the relatively short tenure or employment on most projects or for most employers, the generally high rate of employee turnover, the sequential arrangement of scheduled job activities on construction projects, the outdoor nature of much construction work, the existence of varied weather conditions including wind, rain, cold, heat, and environmental contaminants, frequently small workforces . . . the relationships between contractors and owners, and the frequent change in physical arrangements during construction work due to the installation or removal of permanent systems which can cause interruption to exposure controls (Ex. 330)."

Both government representatives and labor representatives agreed to consider exempting construction but only if a parallel draft was developed for the construction trade. The basis for this recommendation was the numerous reports indicating that construction workers were exposed to MDA and that many had been adversely effected by exposure to this chemical. The Committee also believes that the risk from exposure to MDA is dependent on the degree of exposure and not on the segment of industry where the employee may be employed.

However, the Committee recognized the unique conditions in the construction industry. In the case of MDA exposure in new and retrofit construction, MDA-containing products are used in epoxy coatings for floors and chimneys. Such coatings are ordinarily applied only once during the lifetime of a building. Application for such uses may require less than a full work day. Tiering of provisions appears warranted. It is for these reasons that a separate standard regulating occupational exposure to MDA in the construction industry is being recommended by the Committee. The Committee agreed however that, like the general industry standard, the stringency of the requirements of the construction standard would relate to the extent and duration of employee exposure.

While the Committee did agree to develop a separate provision for the construction trades, the Committee was concerned with lack of representation of the construction trades on the Committee. The OSHA representative advised the Committee that the Construction Advisory Committee had been advised early in the fall of 1985 of the development of a proposed rule for MDA which would be applicable to the construction trades. The Committee did agree, however, that it would consult with representatives from labor and management of the construction trades in developing a standard applicable to that industry. Later, one of the union representatives was replaced by a labor representative from the construction trades and labor's interests in construction were represented.

(a)(2) This section contains exclusions for workplaces that process, handle or use products containing MDA where initial monitoring data show that the product cannot release MDA at or above the action level and where dermal exposure does not exist. The criterion for exemption under paragraph (a)(2) requires monitoring data that show that the material is incapable of releasing airborne MDA at or above the action level under the expected conditions of processing, handling or use and the likelihood of dermal exposure does not exist.

The Committee recognized that in some segments and operations, exposures are below the action level and do not result in dermal exposure because of the nature of the process or use. In those circumstances, the Committee has proposed an exemption from the proposed MDA standard. In general, the Committee agreed that because of the low vapor pressure of MDA, the inhalation potential is minimal provided the substance is not heated. However, the Committee would only recommend this exclusion provided that dermal exposure was not likely. Further, the Committee believed that continued monitoring for many operations where the evidence clearly demonstrates that exposures will be consistently below the action level and where dermal exposure does not exist does not appear to be necessary to protect employees, nor does it appear to be cost-effective. Moreover, the Committee noted that the recommended proposed rule has been structured so that any compliance burden imposed by the standard is related to the extent and duration of the employees exposure in the employer's workplace. The Committee agreed however, that in order to be exempt from these provisions the employer must monitor to make this determination. The Committee did not feel that the employer should rely on data generated by manufacturers and believed to be applicable to downstream users.

There was much discussion concerning this recommendation. Representatives from the labor interest expressed concern that if the employer relied on monitoring data furnished by manufacturers to exclude himself from these regulations, the data used might not be applicable to that particular workplace and the employee would be exposed needlessly. Further, they were concerned as to what course of action OSHA could take in this instance. A representative of a primary manufacturer stated that it has been his experience that if the data supplied by the manufacturer was unreliable and did in fact result in a customer being cited, the supplier of the data would lose a customer. Furthermore, since it is not advantageous for suppliers to lose customers, more than likely the data supplied would be reliable. Finally, the Committee agreed that the general industry employer must generate his own monitoring data to be exempt from these provisions.

The Committee did, however, agree to allow the employer to demonstrate that its employee exposures are below the action level by using historical monitoring data, i.e., monitoring results for these employees obtained within a one-year period preceding publication of this proposed standard.

(a)(3) Employers may also rely on objective data as the basis for an exemption but only when the data indicate that no MDA is ambiently or dermally released. The Committee believes that the primary and intermediate users will be in the best position to test their products and to supply the necessary objective data which indicates that MDA is not ambiently released and there is no likelihood for dermal exposure. This recommended proposed standard thus would not require downstream employers to generate their own objective data on the MDA levels likely to be released from a product if they can obtain it from producers or other processors.

(a)(4) The proposed standard also would include an exemption for the storage, transportation, distribution or sale of MDA in intact containers sealed in such a manner as to contain the MDA dusts, vapors or liquids, except for the provisions of 29 CFR 1910.1200 as incorporated into this standard and the emergency provisions of this standard. Containers would be covered by the Hazard Communication standard, 29 CFR 1910.1200 (48 FR 53280; Nov. 29, 1983), which requires, in conjunction with the proposed MDA standard, labeling containers to indicate that they contain MDA (a suspect carcinogen), employee training specifying what to do if the container was opened or broken, and supplying material safety data sheets to users/employees.

The basis for this exemption is that sealed containers are unlikely on a regular basis to leak sufficient MDA to expose employees over the action level or pose a dermal exposure problem. The labeling and training provision of the hazard communication standard provides sufficient protection in those situations where a container breaks so that employees will know how to handle and clean up a spill safely. The intention of this exemption is to cover warehouses, distributors, supply rooms and similar operations where chemical containers are stored, transported or sold and not normally opened. However, operations where the containers are opened and the contents used would be covered because of the possibility of exposure in excess of the action level or dermal exposure.

The industry representative of primary manufacturers expressed some concern with the labeling provisions, in that there should be some minimum concentration established for labeling products containing MDA. The OSHA representative indicated that labeling would be done in accordance with the Hazard Communciation Standard which requires that products containing levels of 0.1% or greater carcinogens must be labelled. The Committee agreed that this exclusion should be consistent with the requirements found in Hazard Communication Standards.

(a)(6) The Committee agreed that the employer must appropriately document the information which supports the exemption, and the employer must maintain a record of this information.

Paragraph (b)—Definitions

Action Level

The Committee recommends that an "action level" of approximately one-half of the established permissible exposure limit be established in the proposed regulation. The Committee acknowledged that the purpose of the action level is to relieve the burden on employers by providing a cut-off point for required compliance activities under the standard. The broad scope of the working draft necessarily encompasses many employers whose employees are exposed to levels of MDA below the permissible exposure limit. Such employers may be required to either perform initial monitoring for determining the extent of their employees' exposure to MDA or otherwise to document the employees' exposure by other objective data. If, on the basis of the results of the initial monitoring or other data, an employer can demonstrate that an employee is exposed to MDA below the action level, the employer may be allowed to discontinue compliance activities for that employee. The Committee, believed that the action level concept provides an objective means for an employer to determine what further actions are required for compliance with the standard.

The Committee also agreed with OSHA's statistical basis for determining the action level as discussed in connection with several other OSHA health standards (see, for example, acrylonitrile 43 FR, 4794) is appropriate. In brief, although all measurements on a given day may fall below the permissible exposure limit, some possibility exists that on unmeasured days the employee's actual exposure may exceed the permissible limit. Where exposure measurements are above one-half of the permissible exposure limit, i.e. the action level, the employer cannot reasonably be confident that the employee may not be overexposed. (Leidel, N.A. et al., "Exposure Measurement Action Level and Occupational Environmental Variability." DHEW, PHS, DCD, NIOSH, DLCK (August 1975). Therefore, requiring periodic employee exposure measurements to begin at the action level provides the employer with a reasonable degree of confidence in the results of the measurement program.

The Committee also agreed that, in the absence of a demonstrated safe level of exposure for a carcinogen, it is appropriate to begin some protective actions at one-half the PEL. Establishing an action level serves such a purpose.

Employee Exposure

The Committee also agreed that the recommended proposed regulation would include a definition of "employee exposure" which would mean that exposure which would occur if the employee were not using a respirator or personal protective equipment. The employee's exposure measurements would be made without regard to any use of personal protective equipment. The Committee agreed that exposure monitoring is not a single-purpose activity. It is necessary to know employee exposure levels without the use of respiratory protection to evaluate the effectiveness of engineering and work practice controls and to determine whether additional controls must be instituted. In addition, monitoring is necessary to determine which respirator, if any, must be used by rhe employee. This definition is consistent with OSHA's previous use of the term "employee exposure" in other health standards.

Emergency

The Committee also recommended including a definition of an emergency in this recommended draft standard. Emergency is defined to mean any occurrence such as, but not limited to equipment failure, rupture of containers, or failure of control equipment which results in an unexpected and potentially hazardous release of MDA. Sections of the proposal that include provisions to be met in case of emergencies will include respiratory protection, medical surveillance, and employee information and training.

The Committee labored extensively before adopting this definition of an emergency. The draft language proposed by OSHA contained the phrase "which results in a unexpected and significant release of MDA". The entire Committee was concerned about the subjectiveness which the definition offered. All wanted to narrow the terminology to make the definition of an emergency more specific. The NIOSH representative expressed concern in using the term significant stating that significant implied some quantification of the substance. One of the industry representatives, expressed concern with deleting the term significant stating that a trivial leak in a pipe could be construed as an unexpected release but would not constitute an emergency, whereas a rupture of a pipe could result in an emergency. He felt that the use of the word "significant" addressed these concerns. The Committee agreed that every spill or leak does not constitute an emergency situation. The exposure to employees must be significant and pose a hazard. The Committee agreed that this is a performance oriented provision relying on judgement and that it is not possible to specify detailed circumstances which constitute an emergency.

Regulated Areas

The Committee recommended that the proposal require the employer to establish regulated areas wherever MDA exposures reasonably can be expected to exceed the permissible exposure limits or where the likelihood for dermal exposure exists. The Committee agreed that access to these areas be regulated and limited to authorized persons. In addition, regulated areas are to be demarcated in any manner that minimizes the number of employees exposed to MDA within these areas.

Definition of MDA

The Committee agreed to include the salts of MDA in the definition of MDA. The Committee examined the data furnished by the NTP bioassays and found that a salt of MDA, methylenedihydrochloride was used. Further the Committee examined data which indicate that the salts of MDA are converted the free amine which presents the final exposure problem. Thus the Committee agreed to include the salts of MDA in the definition of MDA. The Committee was not aware of a commercial use of any of the salts of MDA although information furnished by Eastman Kodak indicated that the company of Psaltz and Bauer did produce the dihydrochloride for resale.

The Committee also agreed to exclude from the definition unreacted MDA contained in solid materials and physically bound thereby prohibiting the release of MDA. Since it is unlikely that the unreacted MDA contained in solids will impose a significant health hazard, the Committee agreed to exclude it from the scope of the standard. The exclusion proposed is intended to omit from the standard's coverage products that do not release MDA.

Paragraph (c)—Permissible exposure limit (PEL)

The Committee report recommends that OSHA promulgate a standard for occupational exposure to MDA. The Committee believes that the provisions of its proposed standard will dramatically reduce dermal exposure to MDA and will limit airborne exposure to MDA by establishing a Permissible Exposure Limit (PEL) of 10 ppb as an 8-hour TWA. The Committee also recommends that the standard contain a Short-Term Exposure Limit (STEL) for airborne MDA exposures of 100 ppb determined in any 15-minute sampling period. The recommendations contained in the Committee's proposed standard are supported by the Committee's findings that occupational exposure to MDA under current occupational conditions poses a risk to the health of employees and that the proposed standard, if adopted can achieve the desired reduction in that risk.

In making its recommendations the Committee considered: (1) The adverse health effects that may occur at current occupational exposure levels; (2) The expected reduction in the occurrence of these effects that will result from the adoption of the proposed PEL and STEL; (3) The technological and economic feasibility of complying with the PEL and the STEL; and (4) The effect that other provisions of the proposed standard will have on reducing the workers occupational exposure to MDA.

In determining what constitutes a sufficiently protective PEL, the Committee considered OSHA's past practices and policies for determining TWA's and more recent Court directives regarding STELs. The proposed 8-hour TWA is intended to provide protection against the carcinogenic effects of MDA as well as protection against MDA hepatotoxic effects (See Health Effects Summary). Although only limited data was available to the Committee it was their belief that the Kopelman *et al.* study indicates that hepatotoxicity can be expected at levels in excess of 3200 ppb. While recognizing that this data is imprecise, the Committee nevertheless recommends that the PEL of 10 ppb, be supplemented by adoption of a STEL of 100 ppb as determined in a sample collected over any 15-minute period. In making this recommendation, the Committee agreed that the STEL should not be an arbitrary multiple of the TWA but should be based on prevention of these adverse effects that will not be prevented by adherence to the 8-hour TWA PEL alone. The Committee recommends that an 8-hour TWA of 10 ppb and a STEL of 100 ppb are needed to protect against long-term carcinogenic effects and acute hepatotoxicity that may result from occupational exposure to MDA.

The Committee considered the carcinogenic potential expected from occupational exposure to MDA and used OSHA's past policies and practices as guidance in making these determinations. The Committee recognized that occupational exposure to carcinogens should be reduced to the extent feasible. Having made this determination, the Committee relied on the technological and economic information provided in this document to make a determination that achievement of a 10 ppb 8-hour TWA and the 100 ppb STEL are feasible (See Technological Feasibility Section).

The Committee stated its concern regarding the risk posed by dermal absorption of MDA in the occupational environment. The Committee was able to quantify the likely contribution of dermal absorption to the overall body burden and thus the carcinogenic risks posed by MDA in the workplace. The Committee agreed that the contribution of dermal absorption to the hazards posed by MDA are significant.

Because dermal absorption estimates make such a sizable contribution to carcinogenicity, the Committee has recommended stringent personal protective clothing requirements in the recommended standard. The Committee based these recommendations primarily on the results of the benefit analysis that indicate that more than 90% of the benefits derived from adopting the Committee's recommended standard would be the result of reducing dermal exposures to the extent feasible. The Committee was not able to quantify the contribution of dermal absorption to the development of hepatotoxicity.

Paragraph (d)—Emergency Situation

The Committee agreed that available health data suggest that elevated short-term exposure to MDA should be viewed with concern. The Committee believes that an unexpected high exposure must be viewed as an emergency situation. A written plan would be required where there is a possibility of an emergency and procedures for alerting employees in the event that an emergency occurs.

The recommended provisions also include a requirement to alert employees other than those who have the potential to be directly exposed in an emergency situation. Such employees may be employees from neighboring worksites who may inadvertently approach the emergency site. They may also include employees from other work shifts or employees who may be later exposed to work surfaces or equipment contaminated as a result of the emergency. It should be noted that several of the Committee members expressed concern with the boilerplate nature of the emergency provisions. One of the labor representatives expressed his belief that in this instance OSHA citations are too late and not enough. Further, he stated that all workers should be notified of the occurrence of an emergency. Based on these objections, the Committee proposed alternative language which allows for alerting employees directly exposed, evacuating affected employees not engaged in correcting the emergency and alerting all other employees who may be exposed as a result of the emergency.

The Committee agreed that employees involved in correcting the emergency conditions would be provided with appropriate respirators and other personal protective equipment and clothing. Employees not involved in correcting the emergency conditions should be evacuated from the area. The need for evacuation, however, should depend on the specific circumstances. If MDA, in its low vapor state, is spilled it may not be necessary to evacuate all workers from the area. Thus, it appears that the use of judgement on the part of the employer, based on the circumstances at hand, may be needed to determine when, and if an emergency situation requires immediate evacuation. The Committee found that these minimal requirements would provide the necessary means to ensure that affected employees are substantially protected against hazardous exposures.

The Committee also recommended the development of a written plan for each workplace where there is a possibility of an emergency. The plan shall include the elements prescribed in 29 CFR 1910.38, "Employee emergency plans and fire prevention plans."

The Committee believes that the performance language of the emergency situation paragraph will give employers the flexibility to choose any effective method of alerting employees, including communications systems, voice communication, or a bell or other alarm.

Paragraph (e)—Exposure Monitoring

The Committee noted that Section 6(b)(7) of the Act (29 U.S.C. 655) mandates that any standard promulgated under section 6(b) shall, where appropriate, provide for monitoring or measuring employee exposure at such locations and intervals and in such manner as may be necessary for the protection of employees.

Thus, the Committee believes that any proposed MDA standard would require each employer who has a place of employment involved in the production, handling, or use of MDA to conduct monitoring to determine employee exposure to MDA.

The Committee agreed that it is appropriate for employers to measure employee exposure to MDA for the following reasons. First, exposure monitoring informs the employer whether the employer's legal obligation to keep employee exposure below the permissible exposure levels is being met. Second, exposure monitoring evaluates the effectiveness of engineering and work practice controls and informs the employer whether additional controls need to be instituted. Third, exposure monitoring is necessary to determine whether respiratory protection is required at all, and if so, which respirator is to be selected. Fourth, Section 8(c)(3) of the Act (29 U.S.C. 657) requires employers to notify promptly any employee who has been or is being exposed to toxic materials or harmful physical agents at levels which exceed those prescribed by an applicable occupational safety or health standard, and to inform such employee of the corrective action being taken. Exposure monitoring is necessary in order to determine whether employees are being exposed to MDA at levels exceeding those prescribed by this standard. Finally, the results of exposure monitoring constitute a vital part of the information which must be supplied to the physician and may contribute information on the causes and prevention of occupational illness.

The exposure monitoring recommendations made by the Committee would require the employer to determine the exposure for each employee exposed to MDA. It is not necessary to provide separate measurements for each employee. If a number of employees perform essentially the same job under the same conditions, it may be sufficient to monitor a fraction of such employees to obtain data that are representative of the remaining employees. Representative personal sampling for employees engaged in similar work and exposed to similar MDA levels can be achieved by measuring that member of the exposed group reasonably expected to have the highest exposure. This result would then be attributed to the remaining employees of the group.

In many specific work situations, the representative monitoring approach can be more cost-effective in identifying the exposures of affected employees. However, employers may use any monitoring strategy which correctly identifies the extent to which all employees are exposed.

Because of the nature of the MDA exposure hazard, it is necessary that the scope of the proposal be as broad as possible to protect potentially exposed employees. However, many employers will be required only to perform initial monitoring to determine employee exposures. If the results of initial monitoring demonstrate that an employee's exposure to MDA is below the action level, the employer is allowed to discontinue monitoring and other activities under this provision of the standard for that employee. The Committee established this provision to reduce the burden on employers, while providing them with an objective means of determining whether they must take additional steps for compliance with the standard.

The Committee recommendation also contains provisions for periodic monitoring. The more frequent the measurement, the higher the accuracy of the employee exposure profile. Selecting an appropriate interval between monitoring efforts is a matter of judgment. Where exposure measurements are determined to be above the permissible exposure limit, the employer is required to monitor every 3 months. Where exposure measurements are above the action level but at or below the PEL, monitoring may be required only at 6 month intervals. Additional monitoring may also be required for a particular job position if any changes in production, processes, control measures, or personnel result in new or additional exposure to MDA. The redetermination of employee exposure is necessary to assure that the most recent results accurately represent existing exposure conditions. This is necessary so the employer may take appropriate action such as instituting additional engineering controls or providing appropriate respiratory protection.

The Committee also recommended that provisions for visual monitoring of exposed areas be made. The employer would be required to make routine inspections of employee dermal areas potentially exposed to MDA. If the employer determines that the employee has been exposed to MDA the employer shall:

(a) Determine the source of exposure;

(b) Implement protective measures to correct the hazard; and

(c) Maintain records of the corrective actions in accordance with (recordkeeping section).

The Committee fully realizes that visual monitoring of exposed skin for yellow staining is a useful tool in controlling employee exposure to some hazardous substances. However, the Committee was concerned that every yellow stain would be attributed to MDA exposure, when in fact some non-occupational exposures could result in yellow staining of the skin. The Committee agreed that the employer should make every effort to determine if the yellow staining could be attributed to non-occupational exposure. However, the Committee also agreed that it was not relevant to determine if yellow staining was due to amines other than MDA for the controlling factor in preventing occupational chemical exposure was the use of personal protective equipment. The personal protective equipment which would prevent occupational exposure to MDA would also prevent occupational exposure to any of the other amines which might yellow stain the skin. So in essence, if the employee had yellow stain resulting from occupational exposure to a chemical, this indicates that his personal protective equipment is either inadequate or not being used properly.

The second set of concerns which the Committee presented involved the determination as to whether the personal protective equipment was inadequate or whether it was just not being used properly. An industry representative expressed concern with making an effectiveness determination. The 0SHA representative indicated that the employer upon noticing the yellow staining on the hands of a worker would first make several general inquiries such as: How did you get this staining? Have you been doing something at home which has caused this? Have you been wearing your protective equipment while working? Depending upon the answer to these questions the employer might choose to do some dermal monitoring to determine the effectiveness of the protective equipment. He may choose simply to observe the worker to determine if an inadequate work practice is actually the source of the employee's exposure.

Finally the Committee agreed that the employer must maintain a record of the corrective actions which he has taken.

Paragraph (f)—Regulated Areas

The Committee recommended proposal requires the employer to establish regulated areas where the potential for airborne concentrations of MDA in excess of the permissible exposure exists; and where the potential for employee exposure to hazardous amounts of liquid MDA or mixtures exists. This requirement is designed to minimize the number of employees exposed to concentrations of MDA. The requirement has been tiered to reflect the difference in employee exposure to ambient concentrations or MDA and the potential for dermal deposition. Unauthorized employees are restricted from entering the regulated areas. Other purposes of this section are to designate those areas where precautionary signs are to be posted and to designate areas where employees may be subject to three-month monitoring when their exposure is above the PEL and where activities such as smoking, eating, etc. are prohibited. Additionally, employees working in regulated areas are required to wear the appropriate type of personal protective equipment.

The Committee agreed that regulated areas are to be demarcated in any manner that minimizes the number of employees exposed to MDA within these areas. To increase the performance-orientation of the standard and minimize recordkeeping, the Committee recommended that no detailed requirements be specified regarding the demarcating an area.

The Committee recommendation for establishing a requirement for regulated areas is tiered. A traditional approach is recommended for establishing a regulated areas at all worksites where the permissible exposure limit is exceeded. This approach covers areas within worksites where there are frequent leaks, or where exposures may be of high concentration but of short duration, e.g. maintenance operations. Where the likelihood for exposure results only from contact with liquid mixtures in the low vapor state, the Committee recommends that a regulated area be established where employees are engaged in routine or non-routine processes requiring the handling, application, or use of MDA. The Committee recognized that at its low vapor state liquid mixtures would not exceed the PEL; however, the potential for contact and inadvertent exposure was great and thus a mechanism to prevent incidental exposure of employees not actively engaged in the process was very much needed. The purpose of a regulated area is to ensure that employers make employees aware of the presence of MDA and attempt to restrict assess. By limiting access, the number of employees inadvertently splashed and subsequently exposed to MDA can be minimized.

The Committee agreed that the establishment of regulated areas is an effective means of limiting the risk of exposure to as few employees as possible. This is consistent with good industrial hygiene practice when exposure to a toxic substance can cause serious health effects. This requirement has additional benefits to employers in that, since the use of personal protective equipment (PPE) is required in these areas, by limiting access to these areas to authorized persons only, the additional obligation imposed by the proposal when PPE is used will be limited to as few persons as possible.

Access to the regulated areas is restricted to "authorized persons", that is, those persons required by their job duties to be present in the area; specifically, to those authorized entry by the employer, this proposal, or the OSH Act.

The reasons that regulated areas are to be established in all work areas where the PEL is exceeded, including maintenance operations, is that it is the Committee's view that the existence of a hazard, rather than the type of operation or work being performed should be the basis for establishment of a regulated area. Areas where exposures are temporarily over the PEL while maintenance is being performed, need to be demarcated to warn employees not performing the repairs and restrict access to these areas. Further, employees who enter the area are thereby warned to wear the appropriate protective equipment when entering. All that is required is a temporary sign in the area where exposures are over the limit while the maintenance is being performed to remind employees that respirators are needed and to indicate that unprotected people should not enter the area.

Paragraph (g)—Methods of Compliance

The Committee's recommended standard proposes that feasible engineering and work practice controls reduce employee exposures to or below the permissible limit. In situations where engineering controls that can be instituted immediately will not reduce exposures to the permissible exposure limit, these controls must nonetheless be used to reduce exposures to the lowest feasible level and be supplemented by the use of respirators. In addition, a compliance program to reduce exposures to within the permissible exposure limits solely by means of engineering and work practice controls must be developed and implemented. Written plans for this program must be developed and furnished upon request for examination and copying to representatives of the Assistant Secretary, representatives of the Director, and affected employees. These plans must be reviewed and updated annually to reflect the current status of the program.

Engineering controls are the preferred means of compliance because they reduce exposure hazards in the workplace environment by removing the airborne contaminant. Engineering controls may include the installation of local exhaust ventilation, modification of a process so as to reduce emission of the contaminant into the workplace, or substitution of another substance. Work practices are often necessary for the effective operation of engineering controls, and they are also a preferred means of controlling exposures.

Respirators are the least satisfactory means of control because of certain difficulties inherent in their use. Respirators are capable of providing adequate protection only if they are properly selected for the concentrations of airborne contaminants present, properly fitted to the employee, properly worn by the employee, properly maintained, and replaced when they have ceased to provide adequate protection. While theoretically it is possible for all of these conditions to be met, it is more often the case that they are not. As a consequence, the protection of employees by respirators is not always effective.

The Committee recognized that there are certain activities, often involving certain maintenance and repair operations, as well as in emergency situations, in which the use of engineering controls to control exposures will not be feasible, regardless of the permissible exposure limits in the standard. Where the employer can show that engineering controls for such operations are not feasible, respirators shall be permitted as a primary means of control.

It has been OSHA policy to require that employers use feasible engineering and workpractice controls to prevent excessive employee exposures and that respirators be used as an alternative only when other methods are not adequate, are not feasible, or have not yet been installed. The Committee agreed with OSHA policy and makes this same recommendation.

Paragraph (h)—Respiratory Protection

The Committee recommendation provides that where respirators are necessary to limit employee exposures to below the permissible exposure limit, the employer must provide the respirators at no cost to the employee, and require that the employees use them.

A table of respirators for use with MDA is included in the standard provisions. The primary basis for the selection and evaluation of respirators is OSHA current policy and is generally used in standard development. The Committee agreed to accept the current OSHA policies found in the respirator selection section even though the Committee realized that OSHA is currently revising its respiratory protection standards. The Committee is making this recommendation with the understanding that, when OSHA amends its current respiratory protection standards, the respiratory section including the selection table will be recodified.

The Committee agreed that respirator use would also be restricted to the time necessary to install or implement feasible engineering and work practice controls. Further, respirators must be used in (1) operations in which engineering and work practice controls are not feasible (e.g., certain maintenance operations), (2) work operations for which the feasible engineering and work practice controls are not sufficient to reduce exposures to or below the PEL, and (3) emergency situations.

The Committee was well aware of the problems associated with relying on respirators as the primary method for controlling worker exposure to MDA. Proper facial fit is essential, but variations in individual facial dimensions, as well as facial hair, scars or growths, make it difficult to maintain this facial fit. Fatigue and reduced efficiency may occur because of increased breathing resistance, among workers wearing respirators. As proposed, the medical examination requirement that the physician's written opinion include recommended limitations on the employee's use of respirators is maintained. Additionally, heat stress, reduced vision, and other safety problems presented by respirators should be considered. Visual impairment could be significant where physical hazards exist and the ability to see is important. Voice transmission through a respirator can be difficult, annoying, and fatiguing, and communication may make the difference between a safe and efficient operation and a hazardous operation, especially in dangerous jobs. Entanglement of air respirator hoses, as well as limited mobility due to hose length, is a problem in heavy industrial environments. A self-contained breathing apparatus is burdensome and limits freedom of movement. It is clear that respirators cannot generally be considered the primary means of employee health protection. Traditionally, the goal of the standard is the control of emissions at the source, which will minimize the need for long-term routine use of respirators.

The Committee also recommended that each employee be properly trained to wear a respirator, to know why the respirator is needed, and to understand the limitations of the respirator. An understanding of the hazard involved is necessary to enable the employee to take steps for his or her own protection. The respiratory protection program implemented by the employer must conform to that set forth in 29 CFR 1910.134. This provision contains basic requirements for proper selection, fit, use, cleaning, and maintenance of respirators.

The Committee also believes emergencies are situations where respirators must be used to protect employees. Since it is unrealistic to predict the expected contaminant concentrations to which an employee may be exposed in all emergencies, the Committee recommends the use of respirators of the type approved for protection against unknown concentration. If an employee is working in an area and using an approved respirator of the type appropriate for the existing concentration, and an emergency occurs, the employee of course should continue using the respirator during his escape. Provisions to provide proper protection for emergency personnel assigned to enter vessels or workplaces containing an unknown concentration to rescue workers or to control the release of the contaminant or perform any necessary repairs will be required to be a part of the emergency plan. In addition, this paragraph will ensure that employers identify operations in which emergencies are apt to occur and make respirators available to employees in these operations.

The Committee also recommends the use of qualitative fit tests. When negative pressure respirators are used, proper fit is especially critical to prevent leakage of contaminated air into the facepiece.

The employer must ensure that the employee's respirators fit properly and that leakage is minimal. A rapid qualitative fit test can be performed as either a positive-pressure test, in which the exhalation valve is closed and the wearer exhales into the facepiece to produce a positive pressure, or a negative pressure test, in which the inhalation valve is closed and the wearer inhales so that the facepiece collapses slightly. Employees should be trained to perform this test.

The Committee also recommends that OSHA make use of the fit testing appendix to ensure that the employer does the proper testing to achieve adequacy of fit testing.

Paragraph (i)—Protective work clothing and equipment

The Committee recommendation would require the employer to provide and the employee to wear the appropriate protective clothing to prevent eye and dermal contact with MDA. The Committee also agreed that the personal protective recommendations should be harmonious with the general provisions under § 1910.132 and 1910.133. The equipment is to be provided at no cost to the employee, and includes the use of these items as may be necessary to protect employees at each particular work situation from exposure to MDA, including, where appropriate, such items as face shields, gloves, aprons, coveralls, or footwear.

Contact with liquid MDA irritates the eyes and may result in corneal burns if the MDA is splashed in the eyes. When there is a realistic possibility of splashing the eyes, precautions are needed. Eye and face protection is currently required by 29 CFR 1910.133, and the types of safety goggles and face shields required by this section to prevent eye and face injury are readily available from safety products companies nationwide.

The requirement in this proposed MDA standard attempts to prevent skin contact with MDA. The risk assessment agreed upon by the Committee analyzes risk associated with dermal exposure and found that a 20 fold increase in risk could be prevented by not allowing dermal contact with MDA. MDA is easily absorbed through at the rate of 2 ug/cm^2 per hour. In addition, recent studies by (Ex. 1–260) indicate that the absorption of MDA peaks 5 hours after the end of the work shift and that 80% of the substance is cleared from the body within 24 hours of exposure. The ease of entry into the body, the continuation of effects after cessation of exposure, and rapid elimination process make MDA a chemical with poor warning properties or indications of exposure. Preventing skin contact and subsequent absorption will reduce both the risk of cancer and the potential for acute toxification.

The Committee recommended proposal is performance-orientated and requires the employer to survey the work situation in determining the type of protective equipment needed. For example, when handling solid materials the employee may be required to wear full body coveralls, and gloves which must be removed at the end of the shift and laundered before being worn again. This employee would also be required to shower at the end of the work shift. Employees required to work only with liquids or MDA liquid mixtures may not be required to wear full body coveralls but instead may be required to wear an apron, and gloves. If the employee does become splashed with MDA or other substances containing MDA, the employee must be directed to immediately remove the clothing, wash the affected area and put on clean clothing if necessary. The employer may require employees to discard gloves when removed and use a new pair of gloves after breaks, lunch, etc. He stated the employee's gloves must be sufficiently protective or changed often enough so that MDA-wetted material is not kept in contact with the skin.

The performance approach grants an employer flexibility to achieve the goal of minimizing MDA contact with the skin in a manner the employer finds most effective. However, being performance oriented, it is of necessity more general and requires the employer to consider the work process in order to achieve the desired goal in the manner that the employer believes is most efficient. This provision is not intended to allow the employee to come into regular contact with MDA or MDA contaminated substances.

The employer must be aware that maintaining the effectiveness of the protective equipment and clothing used is also of keen importance. Exposure occurs by (1) bulk penetration through pinholes, rips, zippers, seams, etc., (2) material failure through chemical degradation, or (3) permeation through the material.

In considering which type clothing is appropriate the employer should examine permeation data and be aware that permeation depends on MDA concentration, thickness of protective material, temperature, and age of protective clothing. Liquid MDA that may be spilled on aprons, coveralls, or footwear or other protective clothing other than gloves can be wiped off within a few minutes time. Therefore, the materials used to make these types of protective clothes need to be impervious to MDA only for a few minutes. However, the liquid MDA permeability rate for materials used to make gloves needs to be less than that for other protective equipment since it is less likely that gloves will be wiped off when liquid contact occurs. Breakthrough times of MDA through various protective clothing materials differ widely, and the choice of material for protection against MDA breakthrough depends on the type of operation involved and length of time of contact, other solvents present, and other factors.

There have been limited tests of protective clothing and devices conducted for various toxic materials. All are not equally protective, and in some cases may realistically provide no effective protection. Record evidence on the permeation ability of MDA can be found in a study by Weeks and Dean. This study determined the breakthrough times required for MDA and other methanolic aromatic amine solutions to permeate the tested material. In the tests, one side of the membrane contained a saline solution to resemble perspiring hands, and the other, a solution of 500 $\mu g/ml$ of MDA in methanol. The study did not evaluate breakthrough times for pure MDA or other mixtures containing MDA. The data indicated that polyvinyl chloride (PVC), natural latex, and polyethelene are the best candidates for protection against this methanolic solution containing MDA.

The Committee agreed that the potential for the employer to ignore factors which determine effectiveness of the protective equipment was great. The Committee has determined however, that the employer is obligated to take the appropriate measures to ensure that workers are not dermally exposed to MDA, and allows the employer the option of choosing the protective clothing or equipment which will achieve this goal. How much clothing and the type of protective clothing needed will depend on the potential for exposure and the conditions of use. The employer in exercising his reasonable judgment in the workplace should be able to select the appropriate clothing or equipment in accordance with this paragraph which satisfies the legal obligation defined by this paragraph.

Many of the Committee members expressed concern with the requirement that the employee remove protective clothing only in change rooms. As examples, they indicated that workers usually remove gloves and discard contaminated protective clothing before entering lunch facilities. Clearly it appears that to require employees to return to the change rooms to discard protective equipment, in these instances, appears to be unwarranted. Of course, the employer who allows the employee to dispose of contaminated clothing in areas outside of the change rooms is still obligated to comply with the requirements for the proper disposal of MDA contaminated materials. In addition, the Committee agreed that clothing not routinely removed throughout the day must be removed at the end of the shift in change rooms.

Paragraph (j)—Hygiene Facilities and Practices

The recommended proposed standard requires various scenarios for the use of shower and change room facilities and lunch rooms for employees exposed to MDA.

The purpose of this section is two-fold. First, it is designed to minimize the exposure to MDA of those workers directly exposed to MDA. Second it is designed to prevent the inadvertant occupational exposure to MDA of other workers with no occupational exposure to MDA. The standard also recognizes that there are two routes of exposure, inhalation and dermal, and that they may occur in the same workplaces. Therefore, the provisions of this section are tiered.

For example, whenever food or beverages are consumed at the worksite and employees are exposed to MDA the employer shall provide readily accessible lunch areas. Lunch facilities in plants where only dermal exposures may occur may not require the same stringent controls as in those facilities where airborne exposures also occur. It is for this reason that only lunch facilities located in areas at or above the PEL must be equipped with a positive pressure filtered air supply, whereas lunch facilities located in areas where exposure to only liquid mixtures of MDA occurs need only be established in an area free of MDA accumulations.

Likewise, showers may be necessary for workers exposed to dusts or vapors; however, showers may not be necessary for workers only exposed to liquids. Workers exposed to liquids must be immediately instructed to wash exposed areas with soap and water or any media which does not increase the absorption properties of MDA. This particular recommendation was given much consideration by the Committee.

The industry representatives expressed concern with the appropriate manner in which MDA should be removed from the skin. All acknowledge that when workers are handling resin structures the hardened epoxies affix themselves to the skin surface and in fact may trap the MDA on the skin surface. In this case, it is extremely important to remove the hardened resin, and then wash the skin surface with soap and water. In the past, a solvent has been used to remove the resin, and then the skin is cleansed with soap and water. Recent data indicate that some solvents, e.g. acetone, increase the absorption properties of MDA and thus should not be used to remove MDA from the skin. Since only one solvent was tested it is not clear whether a suitable solvent exists which can remove the resin but which does not increase the absorption properties of MDA. However, the Committee did not want to recommend that only soap and water be used to remove MDA impregnated resin accumulations. In fact, the Committee felt that it was better, should exposure occur, to remove the hardened resin as soon as possible even if a solvent must be used. The Committee did agree however, that if the employer can demonstrate that a particular solvent does not increase the absorption properties of MDA it should be used to remove MDA from the skin.

Furthermore, the Committee recognized that accidents, ineffective personal protective equipment, and ineffective work practices might lead to employee exposure the Committee recommended stringent provisions for selection, use, and maintenance of personal protective clothing and equipment. Because it is difficult to safely remove this acute toxin from the skin, it is simply better not to get the material on the skin.

The Committee agreed that all employers covered by this provision would be required to assure that employees wash hands and face with soap and water prior to eating, drinking, smoking or applying cosmetics and taking breaks. This recommendation is intended to prevent the accidental ingestion of MDA.

Paragraph (k)—Communication of Hazards to Employees

(1) *Signs and Labels.* The Committee recommended that regulated areas be posted with signs stating:

DANGER

MDA

SUSPECT CANCER HAZARD

LIVER TOXIN

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING

MAY BE REQUIRED TO BE WORN IN THIS AREA

The draft also requires labelling of containers of MDA. The labels must state.

(a) Pure MDA

DANGER

SUSPECT CANCER HAZARD

LIVER TOXIN

(b) Mixtures contain MDA

DANGER

CONTAINS MATERIAL WHICH MAY CAUSE CANCER

LIVER TOXIN

The Committee's recommendations are consistent with section 6(b)(7) of the Act, which prescribes the use of labels or other appropriate forms of warning to apprise employees of the hazards to which they are exposed.

It is required that labels remain affixed to containers leaving the workplace. The purpose of this requirement is to assure that all affected employees, not only those of a particular employer, are apprised of the hazardous nature of MDA exposure.

It is the Committee's view that informing employees of the hazards to which they are exposed is an important element in reducing occupational disease and injury and one of the significant purposes of the Act. Section 6(b)(7) of the Act does not limit an employer's obligation to inform employees of hazardous conditions, to the employer's own employees. When an employer manufactures, formulates, or sells a product, the employer may create exposures not only to his or her own employees, but also to the employees of other employers involved in handling, transporting or using the product. The extent of the obligation to inform should be commensurate with the extent of the exposure. This is especially true where the manufacturer, formulator or seller will, in many cases, be the only employer capable, through his knowledge of the product, of providing the information necessary for protection of employees. A narrower reading of the statutory authority would defeat the protective purposes of the Act by effectively preventing the downstream employee from obtaining adequate information about the hazard. Furthermore, the use of labels required by the standard will alert other employers who would not otherwise know of the presence of MDA in their workplace of their obligation to comply with the standard. The Committee therefore feels that this requirement would be necessary and appropriate.

The Committee's recommendation also requires the posting of warning signs to demarcate regulated areas. These signs are intended to supplement the training which employees are required to receive under the standard. Even trained employees will need to be reminded of the locations of regulated areas and the dangers of entering these areas. In addition, other personnel, such as employees of independent maintenance contractors authorized to enter regulated areas, need to be reminded of the locations of regulated areas, the dangers of entering these areas, and the need to use protective equipment. The Committee agreed that both signs and training are necessary to apprise employees adequately of the hazards associated with MDA exposure.

The Committee also recommended specific wording of the warning signs for regulated areas to assure that the proper warning is given to employees. The word "Danger" is used to attract the attention of workers, to alert them to the fact that they are in a hazardous area and to emphasize the importance of the message that follows. In addition, the use of the word "Danger" is consistent with recent OSHA health standards dealing with carcinogens. The proposed sign legend: "Respirators and Protective Clothing May be Required to Be Worn In This Area," recognizes that there may be a difference between the MDA concentration in air or the potential to be splashed with liquid mixtures, (the bases which determine when a regulated area must be established), and a particular employee's likely exposure.

(2) *Material Safety Data Sheet.* The Committee also recommended statements to be incorporated into a material safety data sheet. This material can be found in Appendix B.

(3) *Employee information and training.* The Committee unanimously agreed that all employers provide a training program for all employees exposed to MDA initially at the time of assignment and at least annually thereafter.

The Committee agreed that an information and training program is essential to inform employees of the hazards to which they are exposed and to provide employees with the necessary understanding of the degree to which each employee can contribute toward minimizing health hazard potentials.

The content of the training program is intended to inform employees of: (1) The hazards to which they are exposed; (2) the necessary steps to protect themselves, including those to be taken during emergency situations; (3) limitations and the proper use of respirators and protective equipment; (4) a description of medical examinations and their purpose; (5) implementation of work practices and the use of available engineering controls; and (6) the contents of this standard. Section 6(b)(7) of the Act makes it clear that these are appropriate goals for an employee training program, and the proposed standard includes such provisions.

The Committee also agreed that the employer would be required to make a copy of the standard and its appendices available to affected employees and their representatives. This requirement, in combination with the review provided for as part of the training program, is intended to ensure that employees understand their rights and duties under this standard.

The employer is also required to provide, upon request, all materials relating to the training program to the Assistant Secretary and Director. This is intended to provide an objective check of compliance with the requirements under this paragraph.

The Committee realized that MDA may be only one of a number of substances to which an employee may be exposed simultaneously in the workplace. The education and training requirements in this standard contain those elements OSHA has determined to be basic. The format and content of the required training and information program are neither rigid nor extensive.

Paragraph (1)—Housekeeping

The Committee's recommendation requires that where there are operations involving liquid MDA or liquid mixtures containing MDA, employers institute a program to detect leaks and spills which includes visual inspections. When leaks or spills of MDA are detected, the proposed language requires the employer to promptly repair all leaks and clean up all spills. These work practices aid in minimizing the number of employees exposed, as well as the extent of any potential for MDA exposure.

Prevention and removal of accumulations of liquid MDA on all surfaces are critically important aspects of minimizing employee exposure. The liquid, if allowed to remain on the floor or work surfaces will slowly evaporate and contribute to a possible airborne hazard or it may become a dermal hazard, through inadvertent skin contact. MDA's low vapor pressure which results in slow evaporation will contribute to and prolong the hazard. The requirement to clean up spills and drips refers to the prevention and removal of visible accumulations of liquid MDA on all surfaces.

In addition to the hazards of exposure to MDA in its liquid forms, hazards also result from exposure to the dusts of MDA. Thus, the recommended language contains provisions for maintaining surfaces as free as possible of accumulations of dusts and waste containing MDA. Surfaces contaminated with dusts may not be cleaned by the use of compressed air. The recommended standard requires HEPA filtered vacuuming equipment for vacuuming. This equipment must be emptied in a manner which minimizes the reentry of MDA dusts into the workplace.

Paragraph (m)—Medical Surveillance

The Committee proposal requires that each employer institute a medical surveillance program for all employees exposed to MDA accordingly:

Employees exposed at or above the action level for more than 30 days per year or who show signs or symptoms of exposure;

Employees who have the likelihood of dermal exposure for more than 15 days per year, exhibit MDA dermal staining, or show signs or symptoms of exposure:

Employees who have been exposed in an emergency situation.

The recommended language requires that the medical surveillance program provide each covered employee with an opportunity for a medical examination. Further, all examinations and procedures must be performed by or under the supervision of a licensed physician and be provided without cost to the employee. Clearly, a licensed physician is the appropriate person to supervise and evaluate medical examination. However, certain parts of the required examination do not necessarily require the physician's expertise and may be conducted by another person under the supervision of the physician.

The Committee also recommends that examinations be given at a reasonable time and place. It is necessary that examinations be convenient and be provided without loss of pay to the employee to assure that they are taken.

The proposal allows the examining physician to prescribe the specific tests to be included in the medical surveillance program. Also included are some specific requirements, such as:

(i) Comprehensive medical and work histories with special emphasis directed to an evaluation of other carcinogens to which the employee is exposed, and smoking and alcohol use.

(ii) Comprehensive physical examination, with particular emphasis given to symptoms related to eye and skin irritation, and liver dysfunction.

(iii) Complete urinalysis.

(iv) Screening for liver damage.

It is important to note that the employer is required to make any prescribed tests available more often than specified if recommended by the examining physician.

The Committee also recommended that the employer provide examinations advised by the physician to any employee exposed to MDA under emergency conditions. Due to the effects of high short-term exposures, it appears prudent to monitor such affected employees in light of existing health data. However, trivial exposure, for example, to a single drop of an MDA containing mixture, would not trigger the emergency examination requirement, particularly if the employee was able to wash his skin right after exposure.

The employer will also be required to provide the physician with the following information: a copy of this standard and its appendices; a description of the affected employee's duties as they relate to the employee exposure level; and information from the employee's previous medical examinations which is not readily available to the examining physician. Making this information available to the physician will aid in the evaluation of the employee's health in relation to assigned duties and fitness to wear personal protective equipment.

The employer is required to obtain a written opinion from the examining physician that contains the results of the medical examination; the physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material health impairment from exposure to MDA; any recommended restrictions upon the employee's exposure to MDA or upon the use of protective clothing or equipment such as respirators; and a statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions which require further explanation or treatment. This written opinion must not reveal specific findings or diagnoses unrelated to occupational exposure to MDA, and a copy of the opinion must be provided to the affected employee.

The purpose in requiring the examining physician to supply the employer with a written opinion is to provide the employer with a medical basis to aid in the determination of initial placement of employees and to assess the employee's ability to use protective clothing and equipment. The requirement that a physician's opinion be in written form will ensure that employers have had the benefit of this information. The requirement that an employee be provided with a copy of the physician's written opinion will ensure that the employee is informed of the results of the medical examination. The purpose in requiring that specific findings or diagnoses unrelated to occupational exposure to MDA not be included in the written opinion is to encourage employees to take the medical examination by removing the concern that the employer will obtain information about their physical condition that has no relation to present occupational exposures.

The Committee's recommendation also includes a multiple physician review mechanism. This provision is triggered by the employee disagreeing with the opinion of the examining physician selected by the employer to conduct any medical examination as a result of signs and/or symptoms indicative of occupational exposure to MDA.

Some of the Committee members disagreed with the inclusion of this provision in the Committee recommendations stating that such matters should be resolved by Labor-Management bargaining. Where labor-management bargaining was not possible, this group urged OSHA to develop a generic standard for multiple physician review and removal. In their opinion, multiple physician review and removal provide too much opportunity for employee abuse.

Conversely, a labor representative cited his positive experience with implementing a multiple physician review and removal provision in the lead industry. In addition, he further stated that unless medical surveillance is accompanied with a multiple physician review mechanism and removal provisions, employees may refuse medical examinations because they fear job termination.

The majority of the Committee members were persuaded by the information provided by the labor representative and agreed that a multiple physician review mechanism should be recommended as part of the proposed recommendation.

Finally, the draft language would contain provisions for removing an employee from exposure who has suffered reversible material impairment to health as a result of being exposed to MDA. The majority of the Committee members agreed that employees whose health has been adversely affected as a direct result of occupational exposure to MDA should be removed from exposure and should receive medical removal benefit protections.

Paragraph (n)—Recordkeeping

The Committee's recommendations are consistent with Section 8(c)(3) of the Act which provides for the promulgation of regulations requiring employers to maintain accurate records of employee exposures to potentially toxic or harmful physical agents which are required to be monitored or measured.

The Committee allowed for the use of objective data in order to be exempted from the standard. Records of objective data must be maintained to demonstrate that employees are not exposed to airborne MDA concentrations or the potential for dermal exposure exists.

The Committee also recommended that records be kept to identify the employee monitored and to reflect the employee's exposure accurately. Specifically, records must include the following information: (a) The names and social security numbers of the employees sampled; (b) the number, duration, and results of each of the samples taken, including a description of the representative sampling procedure and equipment used to determine employee exposure where applicable; (c) a description of the operation involving exposure to MDA which is being monitored and the date on which monitoring is performed; (d) the type of respiratory protective devices, if any, worn by the employee; and (e) a description of the sampling and analytical methods used, and evidence of their accuracy.

The Committee's recommendation also includes a provision for requiring the employer to keep an accurate medical record for each employee subject to medical surveillance. Section 8(c) of the Act authorizes the promulgation of regulations requiring any employer to keep such records regarding the employer's activities relating to the Act as are necessary or appropriate for the enforcement of the Act or for developing information regarding the causes and prevention of occupational illnesses. The Committee believes that medical records, like exposure monitoring records, are necessary and appropriate to both the enforcement of the standard and the development of information regarding the causes and prevention of illness.

The employer is also required to keep a record of any employee's medical removal and return to work status.

The recommended draft requires that all records required to be kept shall be made available upon request to the Assistant Secretary and the Director of NIOSH for examination and copying. Access to these records is necessary for the agencies to monitor compliance with the standard. These records may also contain information needed by the agencies to carry out their other statutory responsibilities.

The recommended proposal would also provide for employees, former employees, and their designated representative to have access to mandated records upon request. Section 8(c)(3) of the Act explicitly provides "employees or their representatives" with an opportunity to observe monitoring and to have access to the records of monitoring and exposures to toxic substances; several other provisions of the Act contemplate that employees and their representatives are entitled to play an active role in the enforcement of the Act.

Access to exposure and medical records by employees, designated representatives, and OSHA shall be established in accordance with 29 CFR 1910.20, OSHA's recently promulgated generic standard for access to employee exposure and medical records (45 FR 35212). By its terms, it applies to records required by specific standards, such as this MDA standard, as well as records which are voluntarily created by employers. In general, it provides for unrestricted employee and designated representative access to exposure records. Access to medical records is also provided to employees and, if the employee has given specific written consent, to the employees' designated representatives. The Committee recommends that unrestricted access to both kinds of records be allowed, but its access to personally identifiable records is made subject to rules of agency practice and procedure concerning OSHA access to employee medical records, which have been published at 29 CFR 1913.10. An extensive discussion of the provisions and rationale for § 1920.20 may be found at 45 FR 35312; the discussion of § 1913.10 may be found at 45 FR 35384. It is noted that revisions to the access to records standard are being developed in an ongoing rulemaking proceeding (45 FR 35212). The MDA standard may be affected by any changes which result from that rulemaking effort.

It is necessary to keep records for extended periods because of the long latency periods commonly observed for carcinogens. Cancer often cannot be detected until 20 or more years after onset of exposure. The extended retention period is therefore needed for two purposes. Diagnosis of disease in employees is assisted by having present and past exposure data as well as the results of the medical exams. Retaining records for extended periods also makes it possible at some future date to review the adequacy of the standard.

The time periods suggested for retention of exposure records and medical records are thirty years, and period of employment plus thirty years, respectively. These retention periods are consistent with those in the OSHA records access standard.

The recommended proposal would also require certain employers to notify the Director in writing at least 3 months prior to the disposal of the records. Section 1910.20(h) also contains requirements regarding the transfer of records.

Paragraph (o)—Observation of Monitoring

The Committee also recommends that OSHA include a provision for observation of exposure monitoring. This provision is in accordance with section 8(c) of the OSH Act which requires that employers provide employees and their representatives with the opportunity to observe monitoring of employee exposures to toxic substances or harmful physical agents. Any observer must be provided with the personal protective clothing and equipment that is required to be worn by the employees who are working in the area. The employer is required to assure the use of such clothing and equipment or respirators and is responsible for requiring that the observer complies with all other applicable safety and health procedures.

Paragraph (q)—Appendices

Five appendices have been included at the end of this proposed standard. Appendices A, B, C, and D have been included primarily for purposes of information. None of the statements contained in Appendices A, B, C, and D should be construed as establishing a mandatory requirement not otherwise imposed by the standard, or as detracting from an obligation which the standard does impose. However, the protocols for respiratory fit testing in Appendix E are mandatory.

Appendix A contains information on the description and exposure levels of MDA. Also provided in Appendix A is information on the health hazards associated with exposure, descriptions of protective clothing and equipment, emergency and first aid procedures, medical requirements, provisions for the observation of monitoring, access to exposure and medical records, and precautions for the safe use, handling and storage of MDA.

Appendix B contains "substance technical guidelines" for MDA, including physical and chemical data, spill and leak procedures, including waste disposal methods, and other miscellaneous precautions for the safe handling of MDA.

Appendix C contains the medical surveillance guidelines for MDA. Included in these guidelines are the description of the routes of entry, the toxicology and symptoms and signs associated with MDA exposure, information on the treatment of acute toxic effects, and surveillance and preventive considerations, including hematology guidelines which may be useful to physicians in conducting the medical surveillance program required by section (i) of this recommended standard.

Appendix D gives details of the recommended sampling and analytical methods for use in monitoring employee exposures to MDA.

Appendix E gives detailed fit testing procedures that are to be followed for qualitative and quantitative fit testing of negative pressure respirators. Various Protocols for qualitative and quantitative fit tests are outlined in detail.

All the Appendices are designed to aid the employer in complying with the requirements of the standard. Paragraph (j) of this proposed standard on the "communication of MDA hazards to employees" specifically requires that the contents of the standard and Appendices A and B be made available to affected employees. Information contained in Appendix C on medical surveillance is to be explained to affected employees. Appendix C also provides information needed by the physician to evaluate the results of the medical examination.

(viii) Summary and Explanation for a Standard for the Construction Industry

In general, this recommended standard for construction is consistent with the Committee's recommended standard to regulate MDA exposure in general industry.

Paragraph (a)—Scope and Application

The final standard applies to all construction work as defined in 29 CFR 1910.12(a), which states:

> The standards prescribed in Part 1926 of this chapter are adopted as occupational safety and health standards under section 6 of the Act and shall apply, according to the provisions thereof, to every employment and place of employment of every employee engaged in construction work.

Section 1910.12 (b) defines "construction work" as work for construction, alteration, and/or repair, including painting and decorating.

The adoption of a separate standard for occupational exposure to MDA in the construction industry was recommended unanimously by the Committee members in this negotiated rulemaking process. The Committee recognized a number of reasons for a separate standard governing MDA exposure in the construction industry:

> . . . the variable nature of construction work activities, the lack of a regular workplace for many construction employees, the relatively short tenure of employment on most projects or for most employers, the generally high rate of employee turnover, the sequential arrangement of scheduled job activities on construction projects, the outdoor nature of much construction work, the existence of varied weather conditions including wind, rain, cold, heat, and environmental contaminants, frequently small workforces . . . the relationships between and among construction contractors and [between] contractors and owners, and the frequent change in physical arrangements during construction work due to the installation or removal of permanent systems which can cause interruption to exposure controls. (Ex. 330)

Accordingly, the recommended standard applies to all occupational exposures to MDA in the construction industry, but is tiered to apply increasingly stringent requirements to those work operations associated with the highest exposures. As the record demonstrates, employees engaged in applying liquid mixtures of MDA generally have the highest MDA exposures of all construction workers. The standard therefore includes specific paragraphs addressed to these operations. The Committee believes that this tiering approach will simultaneously ensure maximum employee protection while scaling the burden of compliance with the recommended standard to the degree of hazard associated with particular operations.

Depending on the nature and extent of exposure, certain provisions of the recommended standard rule may not be applicable in certain situations or may have limited applicability. The applicability of many provisions of the standard is based on the results of initial employee monitoring conducted by the employer or on the availability of other objective data concerning employee exposures or product characteristics. The construction operations listed in paragraph (a)(3) include construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof that contain MDA. The installation of new MDA containing products, such as concrete coatings, is also included.

Paragraph (a)(3) of the revised standard specifically includes MDA spill and emergency situations within the scope of the standard, because these events clearly have the potential for serious employee and bystander exposures. MDA spills might occur during the handling of bags or containers of MDA-containing materials to be used at the construction site. The final group of activities listed in the scope and application paragraph includes the transportation, disposal, storage, or containment of MDA or MDA-containing products on the worksites at which construction operations occur. These operations are included because they have considerable potential for excessive employee exposure to MDA, and, if not closely supervised and properly conducted, may lead to serious bystander exposure as well. The Environmental Protection Agency (EPA) has specific requirements for the disposal of hazardous waste, and the MDA standard contemplates compliance with EPA provisions for the safe disposal and handling of MDA-containing wastes and of MDA-contaminated clothing.

The Committee notes that the recommended standard has been carefully structured to relate the stringency of the requirements to the extent and duration of employee exposures. The Committee therefore believes that no compliance burden will be placed on construction employers who either do not use, handle, or remove MDA-containing products or who maintain MDA exposures in their workplaces at levels below the action level or where the likelihood of dermal exposure does not exist.

Paragraph (b)—Definitions

Paragraph (b) of the recommended MDA standard for the construction industry defines a number of terms used in the standard. In some instances, the definitions used are consistent with those of other OSHA standards and those recommended by the Committee to be used in the general industry standard, e.g., "Director," "Assistant Secretary," and "Authorized person." However, certain other terms require definition because they are used in accordance with their meanings in the construction industry.

"Action level" is defined in the revised standard as an airborne concentration of MDA of 5 parts per billion parts of air (ppb) calculated as an 8-hour time-weighted average. If employers are engaged in MDA work causing worksite levels of MDA above the action level for 30 or more days per year, they must also institute a medical surveillance program for all employees. In addition, on sites where food and beverages are consumed and the airborne MDA level exceeds the PEL, the standard requires employers to provide lunch areas that have airborne MDA levels below the action level.

Past experience with the action level concept in other OSHA standards has demonstrated its usefulness to employers as an objective means of determining a cutoff point for some mandated compliance activities, thus relieving them of some of their compliance obligations in situations where higher exposures do not occur.

The Committee believes that action levels are important because their use permits employers to concentrate their resources on those employees and workplace conditions with the potential for high MDA exposures. Thus the action level in the recommended standard provides for the most cost-effective means of employee protection.

"Employee exposure" is defined as that exposure to airborne MDA that would occur if the employee were not using respiratory protective equipment. The Committee believes it is essential to determine employee exposure levels without the use of respiratory protection in order to gauge the efficacy of mandated work practice and engineering controls.

The recommended standard contains a provision requiring the establishment of regulated areas to aid in limiting exposure to MDA. The definition of "regulated area" in the recommended MDA standard covers two types of regulated areas: the one in which liquid mixtures are being used and one in which only solid forms of MDA are used. The fact that the recommended standard contains requirements for two types of regulated areas reflects both the wide differences in construction worksites and the Committee's approach in dealing with this wide range in exposure conditions. These two types of regulated areas thus reflect the recommended standard's use of the "tiering" concept: increasing regulatory stringency with increasing hazard.

"Competent person" is a term and concept widely used and recognized in the Construction field. The recommended proposal definition of a competent person as one who is capable of identifying existing MDA hazards in the workplace and who has the authority to take prompt corrective measures to eliminate them is consistent with the definition in 29 CFR 1926.32(f). OSHA's safety and health standards for the construction industry.

The terms "clean room," "equipment room," and "high-efficiency particulate air (HEPA) filter" are self-explanatory and refer to hygiene areas and equipment storage areas used in the construction industry. A more detailed discussion of HEPA filters may be found in the explanation and summary sections of this preamble that deal with housekeeping provisions.

Paragraph (c)—Permissible Exposure Limit

The Committee recommends that the PEL for the construction industry be set at 10 parts of MDA per billion parts of air as an 8-hour time-weighted average (TWA) limit, which is the same PEL established in the recommended standard for general industry.

The determination that establishment of a PEL for construction is necessary is based on record evidence that shows that occupational exposure to MDA presents a risk of mortality from cancer.

The PEL is also based on the Committee's finding that a risk of material impairment exists at the current exposure conditions, and that reducing the PEL would substantially reduce that risk. The Committee determined in its quantitative risk assessment (see Section IV) that lifetime exposure to an 8-hour TWA of 250 ppb in spray operations would result in 92.5 excess deaths due to cancer per 1,000 workers. For roll-on operations, the lifetime risk at an exposure level of 20ppb would be 22.5 cancers per thousand workers.

The Committee considered several PELs before selecting a PEL of 10 ppb. Neither the selected PEL nor any of the alternatives eliminates MDA risks completely; however, the PEL selected was the lowest level technically and economically feasible for the affected industries. The decision to reduce the PEL to 10 ppb for the construction industry is based on evidence that the 10 ppb limit is the lowest limit that can be achieved by the use of engineering controls and work practices. This finding is based on evidence discussed in Section VI of this preamble (Technological Feasibility and Economic Impact Assessment), which indicates that many operations in construction would have difficulty in consistently meeting a lower PEL without the use of respirators. By recommending a 10 ppb PEL, the Committee believes that it has fulfilled its mandate to protect workers from the harmful effects of MDA exposure within the confines of technological feasibility. Further, the Committee believes that all employees deserve equal protection against the effects of a given toxic material; thus the same exposure limits should be applied to all industries, including construction.

As with the recommended standard for general industry, the recommended standard for construction establishes a ceiling or short-term exposure limit for MDA. The decision to include a STEL is discussed at length in Section X of this preamble (Summary and Explanation for a Revised Standard for General Industry).

Paragraph (d) Employee rotation

The Committee also agreed that employee rotation shall not be permitted for the purpose of controlling employee exposure.

Paragraph (e)—Communication Among Employers

Paragraph (e) of the revised rule requires that, on multiemployer construction worksites, employers performing MDA work requiring the establishment of a regulated area inform other employers on the site of the nature of their work with MDA and of the existence of and requirements pertaining to regulated areas. This provision is included to minimize the exposure of employees working near the MDA work area. For example, plumbers, electricians, carpenters, and workers from other construction trades frequently work alongside employees applying MDA-containing materials, and paragraph (e) intends that employers engaged in MDA application operations notify the employers responsible for the safety and health of these nearby workers of the hazards of MDA.

The Committee recognizes that several different operations involving workers from numerous trades may simultaneously take place on the same construction site and that the exposures of these workers to MDA should be minimized to the extent possible. The Committee believes that requiring employers who are directly involved in MDA-related activities to inform other employers working nearby on a multi-employer worksite of the existence of hazardous levels of MDA, regulated areas, and the rules pertaining to such areas will contribute substantially to the protection of these nearby employees.

Paragraph (f).—Emergency Situation

The Committee agreed that available health data suggest that elevated short-term exposure to MDA should be viewed with concern. The Committee believes that an unexpected high exposure must be viewed as an emergency situation. A written plan would be required where there is a possibility of an emergency and procedures for alerting employees in the event that an emergency occurs.

The recommended provisions also include a requirement to alert employees other than those who have the potential to be directly exposed in an emergency situation. Such employees may be employees from neighboring work sites who may inadvertently approach the emergency site. They may also include employees from other work shifts or employees who may be later exposed to work surfaces or equipment contaminated as a result of the emergency. It should be noted that several of the Committee members expressed concern with the boilerplate nature of the emergency provisions. One of the labor representatives expressed his belief that in this instance OSHA citations are too late and not enough. Further he stated that all workers should be notified of the occurrence of an emergency. Based on these objections, the Committee proposed alternative language which allows for alerting employees directly exposed, evacuating affected employees not engaged in correcting the emergency and alerting all other employees who may be exposed as a result of the emergency.

The Committee agreed that employees involved in correcting the emergency conditions would be provided with appropriate respirators and other personal protective equipment and clothing. Employees not involved in correcting the emergency conditions should be evacuated from the area. The need for evacuation, however, should depend on the specific circumstances. If MDA, in its low vapor state, is spilled it may not be necessary to evacuate all workers from the area. Thus, it appears that the use of judgement on the part of the employer, based on the circumstances at hand, may be needed to determine when, and if an emergency situation requires immediate evacuation. The Committee found that these minimal requirements would provide the necessary means to ensure that affected employees are substantially protected against hazardous exposures.

The Committee also recommended the development of a written plan for each workplace where there is a possibility of an emergency. The plan shall include the elements prescribed in 29 CFR 1910.38, "Employee emergency plans and fire prevention plans."

The Committee believes that the performance language of the emergency situation paragraph will give employers the flexibility to choose any effective method of alerting employees, including communications systems, voice communication, or a bell or other alarm.

Paragraph (g)—Exposure Monitoring

The recommended standard also requires that construction employers conduct monitoring to determine employee exposures to MDA. The recommended standard requires initial determinations of employee exposures and personal and environmental monitoring using frequencies and patterns of monitoring sufficient to represent with reasonable accuracy the exposures of employees. The standard would also require that personal and environmental monitoring be conducted no less frequently than once every 3 months if MDA exposure exceeds the PEL and once every 6 months if exposure is between the action level and the PEL. The Committee discussed alternatives to the traditional monitoring approach recommended in the general industry standards in recognition of the concerns that these traditional requirements might be inappropriate for the transient, non-fixed nature of construction worksites.

The Committee believes, however, that monitoring serves several purposes:

(1) Monitoring confirms compliance with the PEL;

(2) Monitoring provides warning when control measures are not working;

(3) Monitoring provides data on exposure levels that may indicate excess risk of disease;

(4) Monitoring is necessary to demonstrate when controls are required and when use of controls may be discontinued;

(5) Monitoring provides information necessary for the proper selection of respirators.

The Advisory Committee for Construction Safety and Health (CACOSH) affirmed the "need for environmental monitoring as part of effective worker protection programs" in the asbestos standard. Moreover, Section 6(b)(7) of the Act mandates that standards promulgated shall, where appropriate, "provide for monitoring or measuring employee exposures at such locations and intervals, and in such a manner as may be necessary for the protection of employees" (29 U.S.C. 655(b)(7)). Based on the recommendations made by CACOSH, and the requirements of the Act, the Committee recommends that the construction trades be required to do the same sort of monitoring required to be done by the general industry sectors.

Accordingly, the recommended standard for construction includes several monitoring requirements, i.e., employers must perform monitoring of their employees, breathing zones that will accurately reflect and be representative of their exposures to MDA. In paragraph (g)(2), construction employers are required to conduct initial monitoring of employee exposures, unless: (1) The employer can demonstrate, on the basis of objective data, that the MDA-containing product or material being handled cannot cause exposures above the standard's action level, even under worst-case release conditions; or (2) the employer has historical or other data demonstrating that exposures on a particular job will be below the action level. Periodic monitoring is addressed in paragraph (g)(3), which stipulates that employers whose MDA operations are being conducted within a regulated area forego periodic monitoring if the employees are all wearing supplied-air respirators while working in the regulated area. Monitoring may be terminated when, in accordance with paragraph (g)(4), employers obtain confirmation by means of periodic monitoring that their employees' exposures are below the action level. Paragraph (g)(5) provides the details of OSHA's reference method (ORM) for MDA sampling and analysis. It specifies the use of procedures outlined in Appendix D (or use of a method equivalent to the ORM). The requirements in paragraphs (g)(6) and (g)(7) pertain to requirements for employee notification of monitoring results and to observation of monitoring, respectively.

Although employers are required to determine the exposure of each employee exposed to MDA, this determination is not required to be based on separate measurements taken for each employee. Instead, the recommended standard permits employers to use a "representative" measurement to characterize the exposures of more than one employee when these employees perform essentially the same job under the same conditions. For these types of situations, it may be sufficient for the employer to monitor one or a few of these employees to obtain data that are "representative" of the exposure of the remaining employees in the group. As permitted in paragraph (g)(1)(iii), representative personal sampling for employees engaged in similar work and exposed to similar concentrations of MDA can be achieved by measuring the exposure of that member of the exposed group who can reasonably be expected to have the highest exposure and then attributing this exposure level to the remaining employees in the group.

In many work situations, this representative monitoring approach may be more cost-effective than individual monitoring of all employees to determine the exposures of affected employees. However, employers are free to use any monitoring approach that will correctly identify the breathing-zone exposures of their employees to airborne MDA.

Paragraph (g)(2)(i) of the revised rule contains requirements for initial monitoring for construction employees exposed to MDA. In this paragraph OSHA requires employers to conduct initial monitoring at the start of each new MDA job in order to assess the effectiveness of existing engineering controls and to provide information necessary for the proper selection of appropriate respirators.

The Committee believes that initial monitoring is essential for protecting employee health because it provides the employer with information for determining the necessity for using engineering controls, instituting or modifying work practices, and selecting appropriate respiratory protection. Recognizing the varied nature of construction projects, the Committee has required that initial monitoring for employee exposures be conducted at the start of each new construction project that involves the handling of MDA-containing materials.

Paragraph (g)(2)(ii) allows employers to dispense with initial monitoring if they can demonstrate by means of objective data that MDA-containing products or material cannot release airborne MDA in concentrations exceeding the action level. OSHA believes that employers may be able to obtain data from the manufacturers of MDA-containing products that demonstrate that these materials will not release MDA at levels that exceed the action level, even under worst-case conditions. This exemption is similar to that recommended by the Committee in the general industry standard and would relieve employers from monitoring when employees are handling MDA containing products that are not capable of releasing a significant amount of MDA.

The Committee also has included in paragraph (g)(2) an exemption from initial monitoring for employers who have historical monitoring data. The Committee included this exemption in recognition of the fact that many employers are currently conducting exposure monitoring on construction sites; this exemption would prevent these employers from having to repeat monitoring activity for construction jobs that are substantially similar to previous jobs for which monitoring was conducted.

However, such monitoring data must have been obtained from projects conducted by the employer that meet the following conditions:

(1) The data upon which judgments are based are scientifically sound and collected using methods that are sufficiently accurate and precise.

(2) The processes and work practices in use when the historical data were obtained are essentially the same as those to be used during the job for which initial monitoring will not be performed.

(3) The characteristics of the MDA-containing material being handled when the historical data were obtained are the same as those on the job for which initial monitoring will not be performed.

(4) Environmental conditions prevailing when the historical data were obtained are the same as for the job for which initial monitoring will not be performed.

The Committee believes that if an employer has monitoring data that meet these conditions, he or she can be reasonably confident that these data are representative of employee exposures that will be encountered on a new construction site. Furthermore the Committee agreed that initial monitoring may often-times not be appropriate for construction worksites because of the short duration of many construction operations.

Furthermore, the Committee agrees with the findings of the ACS during the asbestos hearings, namely that:

> Construction contractors have often found the benefits of monitoring to be quite limited. Their problem is that taking air samples, and getting results, takes far too long. By the time the results arrive, the contractors employees have often already completed their work with the material containing asbestos . . . . a contractor choosing to consult an appropriate data base should not also have to monitor. The data base would serve the same essential purposes that monitoring would otherwise serve. It would inform the contractor of what to expect, and provide him with a sound basis for selecting respiratory protection and assessing the need for other steps. In fact, the data base would be superior to monitoring to the extent that it would eliminate the time lag in getting results from laboratories. (Ex. 84–457)

Thus, the Committee agrees that employers should be encouraged to compile and use any information that will aid in the protection of workers' health. Furthermore, the Committee would recommend the use of such data in lieu of initial monitoring if information from the data base is available and sufficiently detailed to meet the requirements of paragraph (g)(2)(ii) for historical data.

Like the recommended general industry standard, the recommended construction standard requires employers to notify employees of their exposure levels and to provide employees exposed to MDA an opportunity to observe any air sampling being performed in accordance with the standard; designated employee representatives must also be given this opportunity. The recommended standard further specifies that such observers be provided with and required to wear any protective clothing and equipment required by the standard.

These provisions are consistent with Section 8(c) of the Act, which requires employers to permit employees or their representatives to observe any required monitoring and to notify employees of their monitoring results.

In summary, the Committee has determined that the monitoring reguirements contained in paragraph (g) of the revised standard for construction will attain the goals of monitoring provisions traditionally included in OSHA health standards designed for fixed-site manufacturing facilities to suit the variable conditions on construction worksites.

Paragraph (h)—Regulated Areas

The recommended standard requires that signs be posted to alert employees of the existence of areas where the PEL is exceeded or where the likelihood of dermal exposure exists. Paragraphs (h)(2) and (h)(3) require that the regulated area be demarcated in a manner that restricts entry to the area to authorized persons only. Respirators must be supplied to persons entering regulated areas as specified in paragraph (h)(4), and eating, drinking, smoking, and applying cosmetics are prohibited in such areas by paragraph (h)(5). These requirements are consistent with similar provisions in previous OSHA standards (Acrylonitrile, 29 CFR 1910.1045; Inorganic Arsenic, 29 CFR 1910.1018; Ethylene Oxide, 29 CFR 1910.1047; and Vinyl Chloride, 29 CFR 1910.1047) and with the Committee's recommendations for a general industry standard regulating occupational exposure to MDA.

Paragraph (i)—Methods of Compliance

The recommended standard governing occupational exposure to MDA requires that engineering controls and work practices be used to meet the exposure limits contained in the standard. The engineering control methods outlined in the standard included isolation, enclosure, exhaust ventilation, and dust collection. Work practices were also recognized as necessary for maintaining exposures at or below the PEL.

The effectiveness of local exhaust ventilation systems that are equipped with HEPA-filtered dust collection systems was recommended for use in the general industry standards and are likewise being recommended for use in the construction industry.

The Committee believes that general exhaust ventilation systems may also be effective in reducing employee exposure to MDA in construction. Such systems are useful for reducing the concentration of MDA-containing materials and removing potentially harmful MDA particulates from the air through a HEPA filtration system. OSHA cautions employers, however, that the use of general exhaust ventilation will tend to spread MDA airborne contaminants unless the return air is passed through a HEPA filter.

Vacuum cleaners that are equipped with HEPA filters are effective controls for cleaning MDA spills and performing clean-up, since the HEPA filtered vacuum systems collect MDA-containing material and preventing it from becoming airborne.

Isolation of operations where MDA-containing materials are being applied to surfaces during construction activities is an effective means of containing exposures.

The prompt disposal of MDA-containing materials in leak-tight containers can be an effective work practice because MDA-containing materials sealed in disposal containers while they are still wet are less likely to pose a dermal exposure problem.

The Committee believes that the use of the engineering controls and work practices discussed above will greatly reduce employee exposure. Paragraph (i)(1)(d) states that controls other than those listed may also be applicable, provided that the Assistant Secretary can show that they are feasible. When evaluating the feasibility of those controls, the Assistant Secretary will consider their availability in the marketplace.

Paragraph (i)(1)(ii), of the recommended construction standard requires that, in situations where engineering and work practice controls are not sufficient to reduce employee exposures to or below the PEL, the employer must Implement such controls to reduce employee exposure to the lowest feasible level and then supplement them by the use of respiratory protection. This recommendation by the Committee reflects OSHA's traditional policy that engineering and work practice controls should be the primary means by which workers are protected from exposure to harmful substances; personal protective equipment may only be used in emergencies or where other methods are not feasible, are not adequate, or have not yet been installed and tested.

The Committee was guided in making this recommendation by evidence from the asbestos rulemaking which indicated that:

> Using engineering and work practice controls as the primary means of controlling asbestos exposures] must remain the governing principle of an asbestos health standard. OSHA should not allow employers to use personal protective equipment including respirators as a substitute for the former. (Tr. 6/27, p. 74) The rationale behind [the use of engineering and work practice controls before respirators] is based primarily on two principles. One is that protection of the employee is usually most effectively attained by elimination or minimization of the hazard at its source, which work practices and engineering controls are both designed to do. The other is that methods which depend upon human behavior are inherently less reliable than well, maintained mechanical methods. (Ex. 123-A, p. 20)

The Committee also recommended that compressed air not be used to remove MDA-containing materials. Using compressed air to clean MDA dust from surfaces results in the formation of large dust clouds that lead to excessive exposures of the worker and bystanders unless local exhaust ventilation is used. There was no indication, however, that using compressed air to blow MDA-containing dust from surfaces was a current practice.

Paragraph (j)—Respiratory Protection

The recommended standard for the construction industry requires that employers provide respirators at no cost to employees

(1) During the interval necessary to install or implement feasible engineering and work practice controls;

(2) In operations such as maintenance and repair activities for which engineering and work practice controls are not feasible;

(3) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the PEL; and

(4) In emergencies.

Employers are required under paragraph (j)(2) of the revised rule to select appropriate respirators based on employee exposure levels that exist in the workplace. The required respirators range from half-mask air-purifying respirators equipped with high-efficiency filters for concentrations that do not exceed 10 times the PEL to full-facepiece supplied-air respirators or SCBA when the concentration of MDA exceeds 1000 times the PEL. Employers are required to select respirators from those that are approved jointly by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration under the provisions of 30 CFR Part 11. In addition, employers are required to provide powered air-purifying respirators at the request of employees whenever such a respirator will provide adequate protection for the concentration existing in the workplace.

Under paragraph (j)(3), employers are required to institute a Respiratory Protection program as required under 29 CFR 1910.134. The required program is to include (1) criteria for changing filter elements for air-purifying respirators, (2) a policy permitting employees time to leave work areas to wash their faces and respirator facepieces to prevent skin irritation, and (3) a policy for reassigning employees to other jobs if a physician determines that the employee cannot function normally while wearing a respirator. Under paragraph (j)(5), the recommended standard requires that employers conduct qualitative or quantitative fit testing for all employees required to wear a negative-pressure respirator. The requirements for the use, selection, program elements, and fit testing of respirators are the same as those contained in the general industry standard.

Paragraph (k)—Protective Clothing

The recommended construction standard, like the general industry standard requires that all workers exposed to MDA be provided with personal protective clothing and equipment, i.e., coveralls, aprons, gloves, boot covers, and goggles. The Committee has recommended stringent provisions for the use of personal protective clothing because of the hazards associated with dermal absorption of MDA or MDA-containing materials. When nondisposable protective clothing is used, the employer is required by paragraph (k)(2) to launder the clothing in a manner that prevents the release of airborne MDA in excess of the PEL and to notify the person responsible for laundering. Paragraph (k)(3) requires employers to transport contaminated clothing in sealed impermeable bags or other impermeable containers. The requirements of paragraphs (k)(2) and (k)(3) are identical to the requirements of the general industry standard.

In addition, a requirement has been included that the personal protective equipment worn by employees be examined periodically by a *competent person* to detect rips or tears, and that when rips or tears are detected in clothing they must be immediately mended, or the worksuit must be immediately replaced.

In addition, the Committee would recommend that disposable work suits be used by construction workers handling MDA or MDA-containing products. The Committee believes that this type of clothing provides sufficient protection to the worker but eliminates the problems that may be involved in laundering and storing MDA-contaminated clothing on non-fixed work sites. The Committee recognizes that while disposable overalls may not be as durable and comfortable as cotton work clothes, they . . . do not require laundering which would expose another workforce or the worker's family to MDA. The Committee, however, believes that non-disposable work clothes similar to those required in the revised general industry standard will provide sufficient protection for employees engaged in construction activities, provided that such clothing is properly cleaned after work and then laundered.

The Committee also recognizes that heat stress is a concern when disposable protective clothing is used in hot environments. However, the use of protective clothing is necessary to protect employees from MDA exposure that may result from contaminated clothing. In situations in which heat stress is a concern, the Committee believes that employers should use appropriate work-rest regimens and provide heat stress monitoring that includes measuring employees' heart rates, body temperatures, and weight loss. If such measures are used to control heat stress, disposable protective clothing can be safely worn to provide the needed protection against MDA exposure.

Paragraph (l)—Hygiene Facilities and Practices

The hygiene facilities requirements of the recommended construction standard are similar to those recommended in the general industry standard. For example, exposure to MDA at levels above the action level acts as the trigger for the shower provisions. All workers required to wear personal protective equipment must have a place to change their street clothes and to store them separately from their work clothes.

Paragraph (l)(1)(i) of the recommended construction standard modifies the language of the recommended general industry standard to allow change "areas," in recognition of the fact that the place where employees change from street clothing to work clothing and back again to street clothing is not always a separate room but may be merely a separate area of a larger space. This change recognizes that it may not be feasible at some construction sites to provide a separate room with physical barriers. In these instances, employers may provide change areas that are distant from the immediate location where MDA-related work is being conducted, such as on a separate floor of a building.

The Committee also recommends that the term "separate storage facilities" be used in recognition of the fact the employers must use portable storage facilities that can be transported from job to job. The Committee's intent in this provision is to ensure that street clothes are sufficiently separated from work and protective clothing and equipment in order to prevent contamination of employees' street clothing, and this can be accomplished by separate lockers, baskets, or other containers.

New language has been added in the recommended standard to require the provision of clean areas, i.e., areas that have airborne concentrations of MDA below the action level, where employees may consume food or beverages on site. This addition was recommended by CACOSH in its 1980 report (Ex. 84–233). CACOSH recognized that permanent lunch rooms, such as exist on fixed worksites, were probably not feasible for the construction industry, due to the nonfixed nature of construction project worksites. The term "lunch area" was adopted by OSHA to indicate that a temporary facility, such as a separate trailer, would serve the purpose of protecting employee health. The Committee agrees with both OSHA's and CACOSH's findings that the transient work conditions in nonfixed workplaces would make the installation of fixed lunchrooms difficult, and accordingly included a requirement for clean lunch areas in its recommended standard.

Paragraph (m)—Communication of MDA hazards to Employees

In paragraph (m) of the recommended standard, the Committee has included requirements to ensure that the dangers of MDA containing materials are communicated to employees by means of signs, labels, and employee information and training. The requirements for the signs and labels mandated in this section parallel those in OSHA's Hazard Communication standard (29 CFR 1910.1200).

Signs and Labels. The Committee recommends that the construction standard include specifications for signs to be posted at all locations where regulated areas have been established to indicate that concentrations of airborne MDA exceed the PEL or where the likelihood of dermal exposure exists; such signs are to bear the same legend as that recommended in the general industry standard.

The purpose of such signs is to minimize the number of employees in a regulated area by alerting them to the fact that they must have authorization from their employer and take the appropriate protective measures before entering. Furthermore, as discussed in the Summary and Explanation for the recommended standard for general industry) signs serve to apprise employees of the hazards to which they are exposed in the course of their employment, and foster cooperation between the employee and employer in controlling workplace hazards.

The standard also requires that all MDA products and containers of MDA products, including waste containers, be labeled with appropriate information and with a warning statement against inhalation or dermal contact with MDA. These labelling requirements are consistent with those found in 1910.1200.

Employee Information and Training

The recommended training requirements are consistent with those found in 1910.1200, except that annual training is recommended in both the general industry and construction standards. The recommended standard requires that training be provided to all employees prior to or at the time of initial assignment and at least yearly thereafter. Component areas to be covered in the training program include: (1) Methods for recognizing MDA; (2) the health effects associated with MDA exposure; (3) the importance of necessary protective measures to minimize exposure including, as applicable, engineering controls, work practices, respirators, housekeeping and protective clothing, and any necessary instruction in the use of these controls; (4) the purpose, proper use, fitting instructions, and limitations of respirators, as described in 29 CFR 1910.134; (5) the appropriate work practices for performing the MDA related job; and (6) the medical surveillance program requirements. The employer may design and implement his own training program that contains these elements, or rely on third party training programs.

The Committee strongly believes that informing and training employees can reduce the incidence of work-related diseases caused by exposure to hazardous workplace conditions.

Paragraph (n)—Housekeeping

The recommended standard for the construction industry includes a housekeeping provision stipulating that (1) when vacuuming is used for cleanup, only HEPA-filtered equipment may be used, and (2) all waste, scrap, debris, bags, containers, equipment, and contaminated clothing must be collected and disposed of in sealed impermeable bags or in other closed impermeable containers. The Committee believes that these housekeeping practices reflect advances in vacuum filter technology and good hygiene practices, and are essential parts of any effective MDA control program. The Committee believes that the use of HEPA-filtered vacuums and proper disposal practices will considerably diminish the risk of generating airborne MDA during cleanup—a potentially high-exposure activity—and minimize the potential for dermal absorption of MDA. The required use of high efficiency particulate air filters on vacuums employed for cleanup is not intended to preclude the use of other complementary cleanup methods, such as wet methods (where applicable). The Committee believes that the recommended housekeeping requirements will aid in minimizing worker contact with MDA.

Paragraph (o)—Medical Surveillance

Where appropriate the recommended construction standard requires that medical surveillance programs required by Section 6(b)(7) of the OSH Act, be included in OSHA health standards to aid in determining whether the health of workers is adversely affected by exposure to toxic substances. The medical surveillance requirements contained in this recommended MDA construction standard are designed to detect changes in liver function and signs or symptoms of acute liver disease.

The Committee agreed that each employer must institute a medical surveillance program for all employees exposed to MDA as follows:

Employees exposed at or above the action level for more than 30 days per year or who show signs or symptoms of exposure;

Employees who have the likelihood of dermal exposure for more than 15 days per year, exhibit MDA dermal staining, or show signs or symptoms of exposure; and

Employees who have been exposed in an emergency situation.

The recommended language requires that the medical surveillance program provide each covered employee with an opportunity for a medical examination. Further, all examinations and procedures must be performed by or under the supervision of a licensed physician and be provided without cost to the employee. Clearly, a licensed physician is the appropriate person to supervise and evaluate a medical examination. However, certain parts of the required examination do not necessarily require the physician's expertise and may be conducted by another person under the supervision of the physician.

The Committee also recommends that exams be given at a reasonable time and place. It is necessary that exams be convenient and be provided without loss of pay to the employee to assure that they are taken.

The proposal allows the examining physician to prescribe the specific tests to be included in the medical surveillance program. Included are some specific requirements, such as:

(i) Comprehensive medical and work histories with special emphasis directed to an evaluation of other carcinogens to which the employee is exposed, and smoking and alcohol use;

(ii) Comprehensive physical examination, with particular emphasis given to symptoms related to eye and skin irritation, and liver dysfunction;

(iii) Complete urinalysis; and

(iv) Screening for liver damage.

It is important to note that the employer is required to make any prescribed tests available more often than specified if recommended by the examining physician.

The Committee also recommends that the employer provide examinations recommended by the physician to any employee exposed to MDA under emergency conditions. Due to the effects of high short-term exposures, it appears prudent to medically monitor such affected employees. However, trivial exposures which are peripherally related to an emergency do not trigger the requirement.

The employer will also be required to provide the physician with the following information: a copy of this standard and its appendices; a description of the affected employee's duties as they relate to the employee exposure level; and information from the employee's previous medical examinations which is not readily available to the examining physician. Making this information available to the physician will aid in the evaluation of the employee's health in relation to assigned duties and fitness to wear personal protective equipment, when required.

The employer is required to obtain a written opinion from the examining physician that contains the results of the medical examinations; the physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material health impairment from exposure to MDA; any recommended restrictions upon the employee's exposure to MDA or upon the use of protective clothing or equipment, such as respirators; and a statement that the employee has been informed by the physician of the results of the medical examination and of any MDA related medical conditions which require further explanation or treatment. This written opinion must not reveal specific findings or diagnoses unrelated to occupational exposure to MDA, and a copy of the opinion must be provided to the affected employee.

The purpose of requirinq the examining physician to supply the employer with a written opinion is to provide the employer with a medical basis to aid in the determination of initial placement of employees and to assess the employee's ability to use protective clothing and equipment. The requirement that a physician's opinion be in written form will ensure that employers have had the benefit of this information. The requirement that an employee be provided with a copy of the physician's written opinion will ensure that the employee is informed of the results of the medical examination. The purpose of requiring that specific findings or diagnoses unrelated to occupational exposure to MDA not be included in the written opinion is to encourage employees to take the medical examination by removing the concern that the employer will obtain information about their physical condition that has no relation to present occupational exposures.

Like the general industry standard this standard would also include a multiple physician review mechanism. This mechanism was recommended because it was the Committee's belief that this would aid in insuring that employees take physical examinations. Finally, the draft language would contain provisions for removing an employee from exposure who has suffered reversible material impairment to health as a result of being exposed to MDA. The Committee unanimously agreed that employees whose health has been adversely affected as a direct result of occupational exposure to MDA should be removed from exposure and should receive medical removal benefit protections.

Paragraph (p)—Recordkeeping

The Committee's recommendations are consistent with Section 8(c)(3) of the OSH Act which provides for the promulgation of regulations requiring employers to maintain accurate records of employee exposures to potentially toxic substances or harmful physical agents which are required to be monitored or measured. The Committee allows for the use of objective data in order to be exempted from the standard. Records of objective data must be maintained to demonstrate that employees are not exposed to airborne MDA concentrations and that the likelihood for dermal exposure does not exist.

The Committee also recommends that records be kept to identify the employee monitored and to reflect the employee's exposure accurately. Specifically, records must include the following information: (a) the names and social security numbers of the employees sampled; (b) the number, duration, and results of each of the samples taken, including a description of the representative sampling procedure and equipment used to determine employee exposure where applicable; (c) a description of the operation involving exposure to MDA which is being monitored and the date on which monitoring is performed; (d) the type of respiratory protective devices, if any, worn by the employee; and (e) a description of the sampling and analytical methods used, and evidence of their accuracy.

The Committee's recommendation also includes a provision for requiring the employer to keep an accurate medical record for each employee subject to medical surveillance. Section 8(c) of the Act authorizes the promulgation of regulations requiring any employer to keep such records regarding the employer's activities relating to the Act as are necessary or appropriate for the enforcement of the Act or for developing information regarding the causes and prevention of occupational illnesses. The Committee believes that medical records, like exposure monitoring records, are necessary and appropriate to both the enforcement of the standard and the development of information regarding the causes and prevention of illness.

As explained above, it is necessary to relate employees' medical conditions to their exposures to develop information regarding cause and prevention. Medical records are necessary and appropriate for this purpose. In addition, medical records are necessary for the proper evaluation of the employee's health.

The employer is also required to keep a record of any employee's medical removal and return to work status.

The recommended draft requires that all records required to be kept shall be made available upon request to the Assistant Secretary and the Director of NIOSH for examination and copying. Access to these records is necessary for the agencies to monitor compliance with the standard. These records may also contain essential information which is necessary for the agencies to carry out their other statutory responsibilities.

The recommended proposal would also provide for employees, former employees, and their designated representatives to have access to mandated records upon request. Section 8(c)(3) of the Act explicitly provides "employees or their representatives" with an opportunity to observe monitoring and to have access to the records of monitoring and exposures to toxic substances; and several other provisions of the Act contemplate that employees and their representatives are entitled to play an active role in the enforcement of the Act. Employees and their representatives need to know relevant information concerning employee exposure to toxic substances and their health consequences if they are to benefit fully from these statutory rights.

In addition, access to exposure and medical records by employees, designated representatives, and OSHA is to be provided in accordance with 29 CFR 1910.20. Section 1910.20 is OSHA,s recently promulgated generic standard for access to employee exposure and medical records (45 FR 35212). By its terms, it applies as to records required by specific standards, such as this MDA standard, as well as records which are voluntarily created by employers. In general, it provides for unrestricted employee and designated representative access to exposure records. The Committee recommends that unrestricted access to both kinds of records be allowed, but also recommends that Agency access to personally identifiable records is made subject to rules of Agency practice and procedure concerning OSHA access to employee medical records, which have been published at 29 CFR 1913.10. An extensive discussion of the provisions and rationale for § 1920.20 may be found at 45 FR 35312; the discussion of

§ 1913.10 may be found at 45 FR 35384. It is noted that revisions to the access to records standard are being developed in an ongoing rulemaking proceeding (45 FR 35212). The MDA standard may be affected by any changes which result from that rulemaking effort.

It is necessary to keep records for extended periods because of the long latency periods commonly observed for carcinogens. Cancer often cannot be detected until 20 or more years after onset of exposure. The extended retention period is therefore needed for two purposes. Diagnosis of disease in employees is assisted by having present and past exposure data as well as the results of the medical exams. Retaining records for extended periods also makes it possible at some future date to review the adequacy of the standard.

The time periods suggested for retention of exposure records and medical records are thirty years, and period of employment plus thirty years, respectively. These retention periods are consistent with those in the OSHA records access standard.

The recommended proposal would also require certain employers to notify the Director in writing at least 3 months prior to the disposal of the records. Section 1910.20(h) also contains requirements regarding the transfer of records.

To increase the effectiveness of training goals the draft requires that the training material be made available, without cost, to all affected employees or their representatives.

The Committee recognizes the transient nature of the Construction industry and the difficulties which this industry may have with recordkeeping requirements; it is for this reason that the Committee would not mandate the specific methods of recordkeeping. Employers are free to use the services of competent organizations such as industry trade associations and employee associations to maintain the required records. To reduce the costs and facilitate the recordkeeping some groups currently use centralized medical recordkeeping financed through employer contributions. Centralized recordkeeping could be instrumental in alleviating the problem of lost records associated with the transient nature of the construction workforce and the frequency of business closures in this sector.

Paragraph (q)—Observation of Monitoring

The Committee also recommends that OSHA include a provision for observation of exposure monitoring. This provision is in accordance with section 8(c) of the OSH Act which requires that employers provide employees and their representatives with the opportunity to observe monitoring of employee exposures to toxic substances or harmful physical agents. Observation procedures are set forth which require the observer, whether it be an employee or a designated representative, to be provided with the personal protective clothing and equipment that is required to be worn by the employees who are working in the area. The employer is required to assure the use of such clothing and equipment or respirators and is responsible for requiring that the observer complies with all other applicable safety and health procedures.

Paragraph (r) Appendices

Five appendices have been included at the end of this proposed standard. Appendices A, B, C, and D have been included primarily for purposes of information. None of the statements contained in Appendices A, B, C, and D should be construed as establishing a mandatory requirement not otherwise imposed by the standard, or as detracting from an obligation which the standard does impose. However, the protocols for respiratory fit testing in Appendix E are mandatory.

Appendix A contains information on the description and exposure levels of MDA. Also provided in Appendix A is information on the health hazards associated with exposure, descriptions of protective clothing and equipment, emergency and first aid procedures, medical requirements, provisions for the observation of monitoring, access to exposure and medical records, and precautions for the safe use, handling and storage of MDA.

Appendix B contains "substance technical guidelines" for MDA, including physical and chemical data, spill and leak procedures including waste disposal methods, and other miscellaneous precautions for the safe handling of MDA.

Appendix C contains the medical surveillance guidelines for MDA. Included in these guidelines are the description of the routes of entry, the toxicology and symptoms and signs associated with MDA exposure, information on the treatment of acute toxic effects, and surveillance and preventive considerations, including hematology guidelines which may be useful to physicians in conducting the medical surveillance program required by section (i) of this recommended standard.

Appendix D gives details of the recommended sampling and analytical methods for use in monitoring employee exposures to MDA.

Appendix E gives detailed fit testing procedures that are to be followed for qualitative and quantitative fit testing of negative pressure respirators. Various protocols for qualitative and quantitative fit tests are outlined in detail.

All the Appendices are designed to aid the employer in complying with the requirements of the standard. Paragraph (j) of this proposed standard on the "communication of MDA hazards to employees" specifically requires that the contents of the standard and Appendices A and B be made available to affected employees. Information contained in Appendix C on medical surveillance is to be explained to affected employees. The information in Appendix C also provides information needed by the physician to evaluate the results of the medical examination.

IX. Environmental Impact Statement

Environmental Assessment Findings of No Significant Impact

The Committee has reviewed the environmental impact in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Part 1500), and OSHA's DOL NEPA Compliance procedures (29 CFR Part 11).

As a result of this review, the Committee has determined that the proposed rule will not have a significant impact on the external environment. Impacts on the workplace environment are discussed in other portions of this preamble.

X. Authority and Signature

This document was prepared by the Mediated Rulemaking Advisory Committee.

Signed at Washington, DC, this 21st day of May 1987.

Roger Daniel
Dick Champlin
John Keane
Frank Grimes
George Robinson
Joseph Durst
Jo Ann Pigg
Nicole Bernholc
Donald Ross
Larry Dorsey
Larry Mazzuckelli
Patti Waugh

MDA Mediated Rulemaking Advisory Committee

XI. Recommended Standards

General Industry

Part 1910 of Title 29 of the Code of Federal Regulations is therefore proposed to be amended as follows:

PART 1910—[AMENDED]

1. By adding a new paragraph (i) to § 1910.19 to read as follows:

§ 1910.19 Special provisions for air contaminants

* * * * *

(i) *4,4'*-Methylenedianiline (MDA). Section 1910.1048 shall apply to the exposure of every employee to MDA in every employment and place of employment covered by §§ 1910.13, 1910.14, 1910.15, or 1910.16, in lieu of any different standard on exposure to MDA which would otherwise be applicable by virtue of those sections.

2. By adding a new § 1910.1048 to read as follows:

§ 1910.1048 Methylenedianiline.

(a) *Scope and application.* (1) This section applies to all occupational exposures to MDA, Chemical Abstracts Service Registry No. 101–77–9, except as provided in paragraphs (a)(2) through (5) of this section.

(2) This section does not apply to the processing, use, and handling of products containing MDA where initial monitoring indicates that the product is not capable of releasing MDA in excess of the action level under the expected conditions of processing, use, and handling which will cause the greatest possible release; and where the likelihood of dermal exposure does not exist.

(3) This section does not apply to the processing, use, and handling of products containing MDA where objective data are reasonably relied upon which demonstrate the product is not capable of releasing MDA under the expected conditions of processing, use, and handling which will cause the greatest possible release; and where the likelihood of dermal exposure does not exist.

(4) This section does not apply to the storage, transportation, distribution or sale of MDA in intact containers sealed in such a manner as to contain the MDA dusts, vapors or liquids, except for the provisions of 29 CFR 1910.1200 and the emergency provisions (d) of this section.

(5) This section does not apply to the construction industry as defined in 29 CFR 1910.12(b). (Exposure to MDA in the construction industry is covered by 29 CFR 1926.59.

(6) Where products containing MDA are exempted under paragraphs (a)(2) through (5) of this section, the employer shall maintain records of the initial monitoring results or objective data supporting that exemption and the basis for the employers reliance on the data, as provided in the recordkeeping paragraph (n) of this section.

(b) *Definitions.* For the purpose of this section, the following definitions shall apply:

"Action level" means a concentration of airborne MDA of ½ the PEL calculated as an eight (8)-hour time-weighted average.

"Assistant Secretary" means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

"Authorized person" means any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under paragraph (m) of this section, or any other person authorized by the Act or regulations issued under the Act.

"Container" means any barrel, bottle, can, cylinder, drum, reaction vessel, storage tank, commercial packaging or the like, but does not include piping systems.

"Director" means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee.

"Emergency" means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which results in an unexpected and potentially hazardous release of MDA.

"Employee exposure" means exposure to MDA which would occur if the employee were not using personal protective equipment and clothing.

"4,4' Methylenedianiline" or "MDA" means the chemical, 4,4'-diaminodiphenylmethane. Chemical Abstract Service Registry number 101–77–9, in the form of a vapor, liquid, or solid, The definition also includes the salts of MDA. The definition includes MDA contained in liquid mixtures and the MDA vapors released by these liquids. The definition does not include unreacted MDA, physically bound, such that it is incapable of releasing MDA into the workplace, at levels greater than the action level or posing a dermal absorption hazard.

"Regulated Area" means areas where airborne concentrations of MDA exceed or can reasonably be expected to exceed, the permissible exposure limit or areas where the likelihood for dermal exposure exists.

"STEL" means short term exposure limit as determined by any 15 minute sample period. At no time can the 8-hour PEL be exceeded.

(c) *Permissible exposure limit (PEL).* The employer shall assure that no employee is exposed to an airborne concentration of MDA in excess of ten parts per billion (10 ppb) as an 8-hour time-weighted average or a STEL of 100 ppb.

(d) Emergency situations—(1) Written plan.—(i) A written plan for emergency situations shall be developed for each workplace where there is a possibility of an emergency. Appropriate portions of the plan shall be implemented in the event of an emergency.

(ii) The plan shall specifically provide that employees engaged in correcting emergency conditions shall be equipped with the appropriate personal protective equipment and clothing as required in paragraphs (h) and (i) of this section until the emergency is abated.

(iii) The plan shall specifically include provisions for alerting and evacuating affected employees as well as the elements prescribed in 29 CFR 1910.38. "Employee emergency plans and fire prevention plans."

(2) *Alerting employees.* Where there is the possibility of employee exposure to MDA due to an emergency, means shall be developed to alert promptly those employees who have the potential to be directly exposed. Affected employees not engaged in correcting emergency conditions shall be evacuated immediately in the event that an emergency occurs. Means shall also be developed for alerting other employees who may be exposed as a result of the emergency.

(e) *Exposure Monitoring.*—(1) *General.*—(i) Determinations of employee exposure shall be made from breathing zone air samples that are representative of each employee's exposure to airborne MDA over an eight (8) hour period.

(ii) Representative employee exposure shall be determined on the basis of one or more samples representing full shift exposure for each shift for each job classification in each work area where exposure to MDA may occur.

(iii) Where the employer can document that exposure levels are equivalent for similar operations in different work shifts, the employer shall only be required to determine representative employee exposure for that operation during one shift.

(2) *Initial monitoring.* Each employer who has a workplace or work operation

covered by this standard shall perform initial monitoring to determine accurately the airborne concentrations of MDA to which employees may be exposed.

(3) *Periodic monitoring and monitoring freguency.* (i) If the monitoring required by paragraph (e)(1) of this section reveals employee exposure at or above the action level, but at or below the PEL, the employer shall repeat such representative monitoring for each such employee at least every six months.

(ii) If the monitoring required by paragraph (e)(1) of this section reveals employee exposure above the PEL, the employer shall repeat such monitoring for each such employee at least every three (3) months.

(iii) The employer may alter the monitoring schedule from every three months to every six months for any employee for whom two consecutive measurements taken at least 7 days apart indicate that the employee exposure has decreased to below the PEL but above the action level.

(4) *Termination of monitoring.* (i) If the initial monitoring required by paragraph (e)(2) of this section reveals employee exposure to be below the action level, the employer may discontinue the monitoring for that, employee, except, as otherwise required by paragraph (e)(5) of this section.

(ii) If the periodic monitoring required by paragraph (e)(3) of this section reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level the employer may discontinue the monitoring for that employee, except as otherwise required by paragraph (e)(5) of this section.

(5) *Additional monitoring.* The employer shall institute the exposure monitoring required under paragraphs (e)(2) and (e)(3) of this section when there has been a change in production process, chemicals present, control equipment, personnel, or work practices which may result in new or additional exposures to MDA, or when the employer has any reason to suspect a change which may result in new or additional exposures.

(6) *Accuracy of monitoring.* Monitoring shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for airborne concentrations of MDA.

(7) *Employee notification of monitoring results.* (i) The employer shall, within 15 working days after the receipt of the results of any monitoring performed under this standard, notify each employee of these results, in writing, either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) The written notification required by paragraph (e)(7)(i) of this section shall contain the corrective action being taken by the employer to reduce the employee exposure to or below the PEL, wherever the PEL is exceeded.

(8) *Visual monitoring.* The employer shall make routine inspections of employee dermal areas potentially exposed to MDA. If the employer determines that the employee has been exposed to MDA the employer shall:

(i) Determine the source of exposure;

(ii) Implement protective measures to correct the hazard; and

(iii) Maintain records of the corrective actions in accordance with (recordkeeping section).

(f) *Regulated Areas.*—(1) *Airborne Exposures—(i) Establishment.* The employer shall establish regulated areas where the potential exists for exposure to airborne concentrations of MDA in excess of the permissible exposure limits.

(ii) *Demarcation.* Regulated areas shall be demarcated from the rest of the workplace in a manner that minimizes the number of persons potentially exposed.

(iii) *Access.* Access to regulated areas shall be lisited to authorized persons.

(iv) *Personal protective equipment and clothing.* Each person entering a regulated area shall be supplied with, and required to use, the appropriate personal protective clothing and equipment in accordance with paragraphs (h) and (i) of this section.

(v) *Prohibited activities.* The employer shall ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas.

(2) *Dermal Exposures*—(i) *Establishment.* Where employees are engaged in the handling, application, or use of MDA, the employer shall establish those work areas as regulated areas.

(ii) *Demarcation.* Regulated areas shall be demarcated in accordance with signs and labels of this part.

(iii) *Access.* Access to regulated areas shall be restricted so that incidental exposure of employees not actively engaged in the process does not occur.

(iv) *Personal Protective Equipment and Clothing.* Each person working in a regulated area shall be supplied with, and required to use, the appropriate personal protective clothing and equipment in accordance with paragraphs (h) and (i) of this section. When necessary, each employee entering a regulated area shall be supplied with the appropriate personal protective clothing and equipment.

(v) *Prohibited activities.* The employer shall ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated areas.

(g) *Methods of Compliance*—(1) *Engineering controls and work practices.*—(i) The employer shall institute engineering controls and work practices to reduce and maintain employee exposure to MDA at or below the permissible exposure limit, except to the extent that the employer can establish that these controls are not feasible or where the provisions of paragraphs (g)(1) (i) and (ii) or (h)(1)(i) through (iii) of this section apply.

(ii) Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the PEL, the employer shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protective devices which comply with the requirements of paragraph (h) of this section.

(2) *Compliance program.* (i) The employer shall establish and implement a written program to reduce employee exposure to or below the PEL by means of engineering and work practice controls, as required by paragraph (f)(1) of this section, and by use of respiratory protection where permitted under this section. The program shall include a schedule for periodic maintenance (e.g. leak detection) and shall include the written plan for emergency situations as specified in paragraph (d) of this section.

(ii) A written compliance program shall be developed. Upon request this written program shall be furnished for examination and copying to the Assistant Secretary, the Director, affected employees and designated employee representatives. The employer shall review such plans at least once every 12 months to make certain they reflect the current status of the program.

(h) *Respiratory protection.*—(1) *General.* The employer shall provide respirators, and ensure that they are used, where required by this section. Respirators shall be used in the following circumstances (When 29 CFR 1910.134 is amended by OSHA this entire section including the respiratory protection table will be recodified to reflect the new respiratory protection standard).

(i) During the time period necessary to install or implement feasible engineering and work practice controls;

(ii) In work operations for which the employer establishes that engineering and work practice controls are not feasible;

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the PEL; and

(iv) In emergencies.

(2) *Respirator selection.* (i) Where respirators are required or allowed under this section, the employer shall select and provide, at no cost to the employee, the appropriate respirator as specified in Table 1, and shall assure that the employee uses the respirator provided.

(ii) The employer shall select respirators from among those jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health under the provisions of 30 CFR Part 11.

(iii) Any employee who cannot wear a negative pressure respirator shall be given the option of wearing a positive pressure respirator or any supplied-air respirator operated in the continuous flow or pressure demand mode.

(3) *Respirator program.* The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134 (b), (d), (e) and (f).

(4) *Respirator use.* (i) Where air-purifying respirators (cartridge or canister) are used, the employer shall replace the air purifying element as needed to maintain the effectiveness of the respirator. The employer shall ensure that each cartridge is dated at the beginning of use.

(ii) Employees who wear respirators shall be allowed to leave the regulated area to readjust the facepiece or to wash their faces and to wipe clean the facepieces on their respirators in order to minimize potential skin irritation associated with respirator use.

TABLE 1.—RESPIRATORY PROTECTION FOR MDA

Airborne concentration of MDA or condition of use	Respirator type
(a) Less than or equal to 10 x PEL	(1) Half-Mask Respirator with HEPA [1] Cartridge [2]
(b) Less than or equal to 50 x PEL	(1) Full facepiece Respirator with HEPA [1] Cartridge or Canister. [2]
(c) Less than or equal to 1000 x PEL	(1) Full facepiece powered air-purifying respirator with HEPA [1] cartridges. [2]
(d) Greater than 1000 x PEL or unknown concentrations.	(1) Self-contained breathing apparatus with full facepiece in positive pressure mode. (2) Full facepiece positive pressure demand supplied-air respirator with auxilliary self-contained air supply.
(e) Escape	(1) Any full facepiece air-purifying respirator with HEPA [1] cartridges; [2] (2) Any positive pressure or continuous flow self-contained breathing apparatus with full facepiece or hood.
(f) Firefighting	(1) Full facepiece self-contained breathing apparatus in positive pressure demand mode.

Note: Respirators assigned for higher environmental concentrations may be used at lower concentrations.

[1] High Efficiency Particulate in Air filter (HEPA) means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 micrometers or larger.

[2] Combination HEPA/Organic Vapor Cartridges shall be used whenever MDA in liquid form or a process requiring heat is used.

(5) *Respirator fit testing* (i) The employer shall perform and record the results of either quantitative or qualitative fit tests at the time of initial fitting and at least annually thereafter for each employee wearing a negative pressure respirator. The test shall be used to select a respirator facepiece which provides the required protection as prescribed in Table 1.

(ii) The employer shall follow the test protocols outlined in Appendix E of this standard for whichever type of fit testing the employer chooses.

(i) *Protective work clothing and equipment*—(1) *Provision and Use.* Where the likelihood for dermal contact or eye irritation resulting from MDA exposure exists, the employer shall provide, at no cost to the employee, and ensure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(i) Aprons, coveralls or other full-body work clothing which prevents contact with MDA;

(ii) Gloves, head coverings, and foot coverings which prevent contact with MDA; and

(iii) Face shields, chemical goggles, or other appropriate protective equipment which comply with section 1910.133 of this Part.

(2) *Removal and Storage.* (i) The employer shall ensure that employees remove MDA contaminated protective work clothing and equipment at the end of the work shift only in change rooms provided in accordance with the provisions established for change rooms.

(ii) The employer shall ensure that employees remove MDA contaminated protective work clothing or equipment before eating, drinking, smoking, chewing gum or tobacco, taking breaks or applying cosmetics.

(iii) The employer shall ensure that no employee takes MDA contaminated work clothing or equipment out of the change room, except those employees authorized to do so for the purpose of laundering, maintenance, or disposal.

(iv) MDA contaminated work clothing or equipment shall be placed and stored in closed containers which prevent dispersion of the MDA outside the container.

(v) Containers of MDA contaminated protective work clothing or equipment which are to be taken out of change rooms or the workplace for cleaning, maintenance, or disposal, shall bear labels in accordance with § 1910.1200 of this part.

(3) *Cleaning and replacement.* (i) The employer shall provide the employee with clean protective clothing and equipment. The employer shall ensure that protective work clothing or equipment required by this paragraph is cleaned, laundered, repaired, or replaced at intervals appropriate to maintain its effectiveness.

(ii) The employer shall prohibit the removal of MDA from protective work clothing or equipment by blowing, shaking, or any methods which allow MDA to re-enter the workplace.

(iii) The employer shall ensure that laundering of MDA contaminated clothing shall be done so as to prevent the release of MDA in the workplace.

(iv) Any employer who gives MDA contaminated clothing to another person for laundering shall inform such person of the requirement to prevent the release of MDA.

(v) The employer shall inform any person who launders or cleans protective clothing or equipment contaminated with MDA of the potentially harmful effects of exposure.

(vi) MDA contaminated clothing shall be transported in properly labeled, sealed, impermeable bags or containers.

(j) *Hygiene facilities and practices*—(1) *Change Rooms.* (i) The employer shall provide clean change rooms for employees who work in regulated areas, who must wear protective clothing or who must use protective equipment because of their exposure to MDA.

(ii) Change rooms must be equipped with separate storage for protective clothing and equipment and for street clothes which prevents MDA contamination of street clothes.

(2) *Showers.* (i) The employer shall ensure that employees who work in areas where there is the potential for exposure resulting from airborne MDA (e.g., particulates or vapors) above the action level shower at the end of the work shift.

(ii) Shower facilities required by this section shall comply with § 1910.141(d)(3) of this part.

(iii) The employer shall ensure that employees who are required to shower pursuant to the provisions contained herein do not leave the workplace wearing any protective clothing or equipment worn during the work shift.

(iv) Where the employee is exposed to liquid mixtures containing MDA, the employer shall ensure that materials spilled on the skin are removed as soon as possible by methods which do not facilitate the dermal absorption of MDA. Shower facilities for employees exposed only in this manner may not be necessary.

(3) *Lunch Facilities.*—(i) *Availability and Construction*—(A) Whenever food or beverages are consumed at the worksite and employees are exposed to MDA the employer shall provide readily accessible lunch areas.

(B) Lunch areas located within the workplace and in areas where there is the potential for airborne exposure to MDA at or above the PEL shall have a positive pressure, temperature controlled, filtered air supply.

(C) Lunch areas located within the workplace and in areas where only the potential for dermal exposure to MDA exists shall be free of MDA.

(ii) The employer shall ensure that employees exposed to MDA wash their hands and faces with soap and water prior to eating, drinking, smoking, or applying cosmetics.

(iii) The employer shall ensure that employees exposed to MDA do not enter lunch facilities with MDA contaminated protective work clothing or equipment.

(k) *Communication of hazards to employees*—(1) *Signs and labels.* (i) The employer shall post and maintain legible signs demarcating regulated areas and entrances or accessways to regulated areas that bear the following legend:

DANGER

MDA

SUSPECT CANCER HAZARD

MAY CAUSE CANCER

LIVER TOXIN

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING

MAY BE REQUIRED TO BE WORN IN THIS AREA

(ii) The employer shall ensure that labels or other appropriate forms of warning are provided for containers of MDA within the workplace. The labels shall comply with the requirements of 29 CFR 1910.1200(f) and shall include the following legend:

(A) MDA

DANGER

CONTAINS MDA

SUSPECT CANCER HAZARD

MAY CAUSE CANCER,

LIVER TOXIN

(B) Mixtures containing MDA

DANGER

CONTAINS MDA

SUSPECT CANCER HAZARD

CONTAINS MATERIAL WHICH MAY CAUSE CANCER,

LIVER TOXIN

(2) *Material safety data sheets* (MSDS).

(i) Employers shall obtain or develop, and shall provide access to their employees, to a material safety data sheet (MSDS) for MDA.

(ii) Employers who are manufacturers or importers shall:

(A) Comply with subparagraph (a) or (b) above as appropriate, and

(B) Comply with the requirement in OSHA's Hazard Communication Standard, 29 CFR 1910.1200, that they deliver to downstream employers an MSDS for MDA.

(3) *Information and training.* (i) The employer shall provide employees with information and training on MDA, in accordance with 29 CFR 1910.1200(h), at the time of initial assignment and at least annually thereafter.

(ii) In addition to the information required under 29 CFR 1910.1200, the employer shall:

(A) Provide an explanation of the contents of this section, including appendices A and B, and indicate to employees where a copy of the standard is available and,

(B) Describe the medical surveillance program required under paragraph (i) of this section, and explain the information contained in Appendix C.

(C) Describe the medical removal provision required under paragraph (m) of this section.

(l) *Housekeeping.* (1) All surfaces shall be maintained as free as practicable of visible accumulations of MDA.

(2) The employer shall institute a program for detecting MDA leaks, spills, and discharges, including regular visual inspections of operations involving liquid or solid MDA.

(3) All leaks shall be repaired and liquid or dust spills cleaned up promptly.

(4) Surfaces contaminated with MDA may not be cleaned by the use of compressed air.

(5) Shoveling, dry sweeping and other methods of dry clean-up of MDA may be used where HEPA filtered vacuuming and/or wet cleaning are not feasible or practical.

(6) Waste disposal. Waste, scrap, debris, bags, containers, equipment, and clothing contaminated with MDA shall be collected and disposed of in a manner to prevent the re-entry of MDA into the workplace.

(m) *Medical Surveillance*—(1) *General.* (i) The employer shall make available a medical surveillance program for employees exposed to MDA accordingly:

(A) Employees exposed at or above the action level for 30 or more days per year;

(B) Employees who have the likelihood of dermal exposure for more than 15 days per year;

(C) Employees who have been exposed in an emergency situation; and

(D) Employees whom the employer has reason to believe are being dermally exposed in accordance with paragraph (e)(8) of this section.

(ii) The employer shall ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and provided without cost to the employee.

(2) *Initial examinations.* (i) Within 60 days of the effective date of this standard, or before the time of initial assignment, the employer shall provide each employee covered by paragraph (m)(1)(i) of this section with a medical examination including the following elements:

(A) A detailed history which includes: (*1*) Past work exposure to MDA or any other toxic substances; (*2*) a history of drugs, alcohol, tobacco, and medication routinely taken (duration and quantity); and (*3*) a history of dermatitis, chemical skin sensitization, or previous hepatic disease.

(B) A physical examination which includes all routine physical examination parameters, skin examination, and signs of liver disease.

(C) Laboratory tests including (*1*) liver function tests and (*2*) urinalysis.

(D) Additional tests as necessary in the opinion of the physician.

(ii) No initial medical examination is required if adequate records show that the employee has been examined in accordance with the requirements of this section within the previous six months prior to the effective date of this standard or prior to the date of initial assignment.

(3) *Periodic examinations.* (i) The employer shall provide each employee covered by this section with a medical examination at least annually following the initial examination. These periodic examinations shall include at least the following elements:

(A) A brief history regarding any new exposure to potential liver toxins, changes in drug, tobacco, and alcohol intake, and the appearance of physical signs relating to the liver, and the skin;

(B) The appropriate tests and examinations including liver function tests and skin examinations;

(C) Appropriate additional tests or examinations as deemed necessary by the physician.

(ii) If in the physicians' opinion the results of liver function tests indicate an abnormality, the employee shall be removed from further MDA exposure in accordance with paragraph (m)(9) of this section. Repeat liver function tests shall be conducted on advice of the physician.

(4) *Emergency examinations.* If the employer determines that the employee has been exposed to a potentially hazardous amount of MDA in an emergency situation as defined by paragraph (d) of this section, the employer shall provide medical examinations in accordance with paragraph (m)(3) (i) and (ii) of this section. If the results of liver function testing indicate an abnormality, the employee shall be removed in accordance with paragraph (m)(9) of this section. Repeat liver function tests shall be conducted on the advice of the physician. If the results of the tests are normal, tests must be repeated two to three weeks from the initial testing. If the results of the second set of tests are normal and on the advice of the physician, no additional testing is required.

(5) *Additional exams.* Where the employee develops signs and symptoms associated with exposure to MDA, the employer shall provide the employee with an additional medical examination including a liver function test. If the results of liver function tests indicate an abnormality, the employee shall be removed in accordance with paragraph (m)(9) of this section. Repeat liver function tests shall be conducted on the advice of the physician. If the results of the tests are normal, tests must be repeated two to three weeks from the initial testing. If the results of the second set of tests are normal and on the advice of the physician, no additional testing is required.

(6) *Multiple physician review mechanism.* (i) If the employer selects the initial physician who conducts any medical examination or consultation provided to an employee under this section, and the employee has signs or symptoms which could include an abnormal liver function test, and the employee disagrees with the opinion of the examining physician, and this opinion could affect the employee's job status, he may designate a mutually acceptable internist as a second physician, accordingly:

(A) To review any findings, determinations or recommendations of the initial physician; and

(B) To conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(ii) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen (15) days after receipt of the foregoing notification, or receipt of the initial physician's written opinion, whichever is later:

(A) The employee informing the employer that he or she intends to seek a second medical opinion, and

(B) The employee initiating steps to make an appointment with a second physician.

(iii) If the findings, determinations or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve any disagreement.

(iv) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians shall designate a third physician:

(A) To review any findings, determinations or recommendations of the prior physicians; and

(B) To conduct such examinations, consultations, laboratory tests and discussions with the prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(v) The employer shall act consistent with the findings, determinations and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(7) *Information provided to the examining and consulting physicians.* (i) The employer shall provide the following information to the examining physician:

(A) A copy of this regulation and its appendices;

(B) A description of the affected employee's duties as they relate to the employee's potential exposure to MDA;

(C) The employee's current actual or representative MDA exposure level;

(D) A description of any personal protective equipment used or to be used; and

(E) Information from previous employment related medical examinations of the affected employee.

(ii) The employer shall provide the foregoing information to a second physician under this section upon request either by the second physician, or by the employee.

(8) *Physician's written opinion.* (i) For each examination under this section, the employer shall obtain, and provide the employee with a copy of, the examining physician's written opinion within 15 days of its receipt. The written opinion shall include the following:

(A) The occupationally pertinent results of the medical examination and tests;

(B) The physician's opinion concerning whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of health from exposure to MDA;

(C) The physician's recommended limitations upon the employee's exposure to MDA or upon the employee's use of protective clothing or equipment and respirators.

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions resulting from MDA exposure which require further explanation or treatment.

(ii) The written opinion obtained by the employer shall not reveal specific findings or diagnoses unrelated to occupational exposures.

(9) *Medical Removal*—(i) *Temporary medical removal of an employee.*—(A) *Temporary removal resulting from Occupational Exposure.* The employee shall be removed from exposure to MDA following an initial examination found in paragraph (m)(2) of this section, periodic examinations found in paragraph (m)(3) of this section, and additional examination found in paragraph (m)(5) of this section, or an emergency situation found in paragraph (d) of this section accordingly:

(*1*) When the employee exhibits signs and/or symptoms indicative of acute exposure to MDA, the employer shall remove the employee from exposure to MDA and provide the employee with medical surveillance in accordance with paragraph (m)(5) of this section. Liver function tests and physical examinations shall be provided in accordance with the provisions set forth in the medical surveillance paragraphs (m) (2) and (5) of this section.

(*2*) When the examining physician determines that an employee's abnormal liver function tests are not associated with MDA exposure but that the abnormalities may be exacerbated as a result of occupational exposure to MDA.

(B) Temporary removal due to a final medical determination.

(*1*) The employer shall remove an employee from work having an exposure to MDA at or above the action level or where the potential for dermal exposure exists on each occasion that a final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to MDA.

(*2*) For the purposes of this section, the phrase "final medical determination" shall mean the outcome of the physician review mechanism or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section.

(*3*) Where a final medical determination results in any recommended special protective mseasures for an employee, or limitations on an employee's exposure to MDA, the employer shall implement and act consistent with the recommendation.

(ii) *Return of the employee to former job status.* (A) The employer shall return an employee to his or her former job status:

(*1*) When the employee no longer shows signs or symptoms of exposure to MDA, or upon the advice of the physician.

(*2*) When a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to MDA.

(B) For the purposes of this section, the requirement that an employer return an employee to his or her former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(iii) *Removal of other employee special protective measure or limitations.* The employer shall remove any limitations placed on an employee or end any special protective measures provided to an employee pursuant to a final medical determination when a subsequent final medical determination indicates that the limitations or special protective measures are no longer necessary.

(iv) *Employer options pending a final medical determination.* Where the physician review mechanism, or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section, has not yet resulted in a final medical determination with respect to an employee, the employer shall act as follows:

(A) *Removal.* The employer may remove the employee from exposure to MDA, provide special protective measures to the employee, or place limitations upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status.

(B) *Return.* The employer may return the employee to his or her former job status, and end any special protective measures provided to the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status, with two exceptions. If (*1*) the initial removal, special protection, or limitation of the employee resulted from a final medical determination which differed from the findings, determinations, or recommendations of the initial physician or

(*2*) The employee has been on removal status for the preceding six months as a result of exposure to MDA, then the employer shall await a final medical determination.

(v) *Medical removal protection benefits*—*(A) Provisions of medical removal protection benefits.* The employer shall provide to an employee up to six (6) months of medical removal protection benefits on each occasion that an employee is removed from exposure to MDA or otherwise limited pursuant to this section.

(B) *Definition of medical removal protection benefits.* For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that the employer shall maintain the earnings, seniority and other employment rights and benefits of an employee as though the employee had not been removed from normal exposure to MDA or otherwise limited.

(C) *Follow-up medical surveillance during the period of employee removal or limitations.* During the period of time that an employee is removed from normal exposure to MDA or otherwise limited, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(D) *Workers' compensation claims.* If a removed employee files a claim for workers' compensation payments for a MDA-related disability, then the employer shall continue to provide medical removal protection benefits pending disposition of the claim. To the extent that an award is made to the employee for earnings lost during the period of removal, the employer's medical removal protection obligation shall be reduced by such amount. The employer shall receive no credit for workers' compensation payments received by the employee for treatment related expenses.

(E) *Other credits.* The employer's obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer funded compensation program, or receives income from non MDA-related employment with any employer made possible by virtue of the employee's removal.

(F) *Employees who do not recover within the 6 months of removal.* The employer shall take the following measures with respect to any employee removed from exposure to MDA.

(*1*) The employer shall make available to the employee a medical examination pursuant to this section to obtain a final medical determination with respect to the employee;

(*2*) The employer shall assure that the final medical determination obtained indicates whether or not the employee may be returned to his or her former job status, and if not, what steps should be taken to protect the employee's health;

(*3*) Where the final medical determination has not yet been obtained, or once obtained indicates that the employee may not yet be returned to his or her former job status, the employer shall continue to provide medical removal protection benefits to the employee until either the employee is returned to former job status, or a final medical determination is made that the employee is incapable of ever safely returning to his or her former job status.

(*4*) Where the employer acts pursuant to a final medical determination which permits the return of the employee to his or her former job status despite what would otherwise be an unacceptable liver function test, later questions concerning removing the employee again shall be decided by a final medical determination. The employer need not automatically remove such an employee pursuant to the MDA removal criteria provided by this section.

(vi) Voluntary Removal or Restriction of An Employee. Where an employer, although not required by this section to do so, removes an employee from exposure to MDA or otherwise places limitations on an employee due to the effects of MDA exposure on the employee's medical condition, the employer shall provide medical removal protection benefits to the employee equal to that required by paragraph (m)(9)(v) of this section.

(n) *Recordkeeping—(1) Monitoring Data for Exempted Employers.* (i) Where as a result of the initial monitoring the processing, use, or handling of products made from or containing MDA are exempted from other requirements of this section under paragraph (a) of this section, the employer shall establish and maintain an accurate record of monitoring relied on in support of the exemption.

(ii) This record shall include at least the following information:

(A) The product qualifying for exemption;

(B) The source of the monitoring data (e.g., was monitoring performed by the employer or a private contractor);

(C) The testing protocol, results of testing, and/or analysis of the material for the release of MDA;

(D) A description of the operation exempted and how the data support the exemption (e.g., is the monitoring data representative of the conditions at the affected facility); and

(E) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(2) *Objective Data for Exempted Employers.* (i) Where the processing, use, or handling of products made from or containing MDA are exempted from other requirements of this section under paragraph (a) of this section, or where objective data have been relied on in lieu of initial monitoring under paragraph (a) of this section, the employer shall establish and maintain an accurate record of objective data relied upon in support of the exemption.

(ii) This record shall include at least the following information:

(A) The product qualifying for exemption;

(B) The source of the objective data;

(C) The testing protocol, results of testing, and/or analysis of the material for the release of MDA;

(D) A description of the operation exempted and how the data support the exemption; and

(E) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(3) *Exposure measurements.* (i) The employer shall establish and maintain an accurate record of all measurements required by paragraph (e) of this section, in accordance with 29 CFR 1910.20.

(ii) This record shall include:

(A) The dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;

(B) Identification of the sampling and analytical methods used;

(C) A description of the type of respiratory protective devices worn, if any; and

(D) The name, social security number, job classification and exposure levels of the employee monitored and all other employees whose exposure the measurement is intended to represent.

(iii) The employer shall maintain this record for at least 30 years, in accordance with 29 CFR 1910.20.

(4) *Medical surveillance.* (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance required by paragraph (m) of this section, in accordance with 29 CFR 1910. 20.

(ii) This record shall include: (A) The name, social security number and description of the duties of the employee;

(B) The employer's copy of the physician's written opinion on the initial, periodic and any special examinations, including results of medical examination and all tests, opinions and recommendations;

(C) Results of any airborne exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

(D) Any employee medical complaints related to exposure to MDA;

(iii) The employer shall keep, or assure that the examining physician keeps, the following medical records:

(A) A copy of this standard and its appendices, except that the employer may keep one copy of the standard and its appendices for all employees provided the employer references the standard and its appendices in the medical surveillance record of each employee;

(B) A copy of the information provided to the physician as required by any paragraphs in the regulatory text;

(C) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to the information;

(D) A copy of the employee's medical and work history related to exposure to MDA; and

(iii) The employer shall maintain this record for at least the duration of employment plus 30 years, in accordance with 29 CFR 1910.20.

(5) *Medical Removals.* (i) The employer shall establish and maintain an accurate record for each employee removed from current exposure to MDA pursuant to paragraph (m) of this section.

(ii) Each record shall include:

(A) The name and social security number of the employee;

(B) The date of each occasion that the employee was removed from current exposure to MDA as well as the corresponding date on which the employee was returned to his or her former job status;

(C) A brief explanation of how each removal was or is being accomplished; and

(D) A statement with respect to each removal indicating the reason for the removal.

(iii) The employer shall maintain each medical removal record for at least the duration of an employee's employment plus 30 years.

(6) *Availability.* (i) The employer shall assure that all records required to be maintained by this section shall be made available upon request, to the Assistant Secretary and the Director for examination and copying.

(ii) Employee exposure monitoring records required by this paragraph shall be provided upon request for examination and copying to employees, employee representatives, and the Assistant Secretary in accordance with 29 CFR 1910.20 (a)–(e) and (g)–(i).

(iii) Employee medical records required by this paragraph shall be provided upon request for examination and copying, to the subject employee, to anyone having the specific written consent of the subject employee, and to the Assistant Secretary in accordance with 29 CFR 1910.20.

(7) *Transfer of records.* (i) The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.20(h).

(ii) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director, at least 90 days prior to disposal, and transmit the records to the Director if so requested by the Director within that period.

(o) **Observation of Monitoring**—(1) *Employee observation.* The employer shall provide affected employees, or their designated representatives, an opportunity to observe the measuring or monitoring of employee exposure to MDA conducted pursuant to paragraph (e) of this section.

(2) *Observation procedures.* (i) When observation of the measuring or monitoring of employee exposure to MDA requires entry into areas where the use of protective clothing and equipment or respirators is required, the employer shall provide the observer with personal protective clothing and equipment or respirators required to be worn by employees working in the area, assure the use of such clothing and equipment or respirators, and require the observer to comply with all other applicable safety and health procedures.

Appendix A to ^{6} 1910.1048.—Substance Data Sheet, for 4-4′-Methylenedianiline

I. Substance Identification

A. Substance: Methylenedianiline (MDA).

B. Permissible Exposure:

1. Airborne: Ten parts per billion parts of air (10 ppb), time-weighted average (TWA) for an 8-hour workday and an action level of five parts per billion parts of air (5 ppb).

2. Dermal: Eye contact and skin contact with MDA are not permitted.

C. Appearance and odor: White to tan solid; amine odor.

II. Health Hazard Data

A. *Ways in which MDA affects your health.* MDA can affect your health if you inhale it, or if it comes in contact with your skin or eyes. MDA is also harmful if you happen to swallow it. Do not get MDA in eyes, on skin, or on clothing.

B. *Effects of overexposure.* 1. Short-term (acute) overexposure: Overexposure to MDA may produce fever, chills, loss of appetite, vomiting, jaundice. Contact may irritate skin, eyes and mucous membranes. Sensitization may occur.

2. Long-term (chronic) exposure. Repeated or prolonged exposure to MDA, even at relatively low concentrations, may cause cancer. In addition, damage to the liver, kidneys, blood, and spleen may occur with long term exposure.

3. Reporting signs and symptoms: You should inform your employer if you develop any signs or symptoms which you suspect are caused by exposure to MDA including yellow staining of the skin.

III. Protective Clothing and Equipment

A. *Respirators.* Respirators are required for those operations in which engineering controls or work practice controls are not adequate or feasible to reduce exposure to the permissible limit. If respirators are worn, they must have the joint Mine Safety and Health Administration and National Institute for Occupational Safety and Health (NIOSH) seal of approval, and cartridges or canisters must be replaced as necessary to maintain the effectiveness of the respirator. If you experience difficulty breathing while wearing a respirator, you may request a positive pressure respirator from your employer. You must be thoroughly trained to use the assigned respirator, and the training will be provided by your employer.

MDA does not have a detectable odor except at levels well above the permissible exposure limits. Do not depend on odor to warn you when a respirator canister is exhausted. If you can smell MDA while wearing a respirator, proceed immediately to fresh air. If you experience difficulty breathing while wearing a respirator, tell your employer.

B. *Protective Clothing.* You may be required to wear coveralls, aprons, gloves, face shields, or other appropriate protective clothing to prevent skin contact with MDA. Where protective clothing is required, your employer is required to provide clean garments to you, as necessary, to assure that the clothing protects you adequately. Replace or repair impervious clothing that has developed leaks.

MDA should never be allowed to remain on the skin. Clothing and shoes which are not impervious to MDA should not be allowed to become contaminated with MDA, and if they do, the clothing and shoes should be promptly removed and decontaminated. The clothing should be laundered to remove MDA or discarded. Once MDA penetrates shoes or other leather articles, they should not be worn again.

C. *Eye protection.* You must wear splashproof safety goggles in areas where liquid MDA may contact our eyes. Contact lenses should not be worn in areas where eye contact with MDA can occur. In addition, you must wear a face shield if your face could be splashed with MDA liquid.

IV. Emergency and First Aid procedures.

A. *Eye and face exposure.* If MDA is splashed into the eyes, wash the eyes for at least 15 minutes. See a doctor as soon as possible.

B. *Skin exposure.* If MDA is spilled on your clothing or skin, remove the contaminated clothing and wash the exposed skin with large amounts of soap and water immediately. Wash contaminated clothing before you wear it again.

C. *Breathing.* If you or any other person breathes in large amounts of MDA, get the exposed person to fresh air at once. Apply artificial respiration if breathing has stopped. Call for medical assistance or a doctor as soon as possible. Never enter any vessel or confined space where the MDA concentration might be high without proper safety equipment and at least one other person present who will stay outside. A life line should be used.

D. *Swallowing.* If MDA has been swallowed and the patient is conscious, do not induce vomiting. Call for medical assistance or a doctor immediately.

V. Medical Requirements

If you are exposed to MDA at a concentration at or above the action level for more than 30 days per year, or exposed to liquid mixtures more than 15 days per year, your employer is required to provide a medical examination, including a medical history and laboratory tests, within 60 days of the effective date of this standard and annually thereafter. These tests shall be provided without cost to you. In addition, if you are accidentally exposed to MDA (either by ingestion, inhalation, or skin/eye contact) under conditions known or suspected to constitute toxic exposure to MDA, your employer is required to make special examinations and tests available to you.

VI. Observation of Monitoring

Your employer is required to perform measurements that are representative of your exposure to MDA and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you and your representative must also be provided with, and must wear, the protective clothing and equipment.

VII. Access To Records

You or your representative is entitled to see the records of measurements of your exposure to MDA upon written request to your employer. Your medical examination records can be furnished to your physician or designated representative upon request by you to your employer.

VIII. Precautions for Safe use, Handling and Storage

A. *Material is combustible.* Avoid strong acids and their anhydrides. Avoid strong oxidants. Consult supervisor for disposal requirements.

B. *Emergency clean-up.* Wear self-contained breathing apparatus and fully clothe the body in the appropriate personal protective clothing and equipment.

Appendix B to § 1910.1048—Substance Technical Guidelines, MDA

I. Identification

A. Substance identification.

1. Synonyms: CAS No. 101-77-9. 4,4'-methylenedianiline; 4,4'-methylenebisaniline; methylenedianiline; dianilinomethane.

2. Formula: $C_{13}H_{14}N_2$.

II. Physical Data

1. Appearance and Odor: White to tan solid; amine odor.

2. Molecular Weight: 198.26.

3. Boiling Point: 398–399 degrees C at 760 mm Hg.

4. Melting Point: 88–93 degrees C (190–100 degrees F).

5. Vapor Pressure: 9 mmHg at 232 degrees C.

6. Evaporation Rate (n-butyl acetate=1): Negligible.

7. Vapor Density (Air=1): Not Applicable.

8. Volatile Fraction by Weight: Negligible.

9. Specific Gravity (Water=1): Slight.

10. Heat of Combustion: −8.40 kcal/g.

11. Solubility in Water: Slightly soluble in cold water, very soluble in alcohol, benzene, ether, and many organic solvents.

III. Fire Explosion, and Reactivity Hazard Data

1. Flash Point: 190 degrees C (374 degrees F) Setaflash closed cup.

2. Flash Point: 226 degrees C (439 degrees F) Cleveland open cup.

3. Extinguishing Media: Water spray; Dry Chemical; Carbon dioxide.

4. Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5. Unusual Fire and Explosion Hazards: Fire or excessive heat may cause production of hazardous decomposition products.

IV. Reactivity Data

1. Stability: Stable

2. Incompatibility: Strong oxidizers

3. Hazardous Decomposition Products: As with any other organic material, combustion may produce carbon monoxide. Oxides of nitrogen may also be present.

4. Hazardous Polymerization: Will not occur.

V. Spill and Leak Procedures

1. Sweep material onto paper and place in fiber carton.

2. Package appropriately for safe feed to an incinerator or dissolve in compatible waste solvents prior to incineration.

3. Dispose of in an approved incinerator equipped with afterburner and scrubber or contract with licensed chemical waste disposal service.

4. Discharge treatment or disposal may be subject to federal, state, or local laws.

5. Wear appropriate personal protective equipment.

VI. Special Storage and Handling Precautions

A. High exposure to MDA can occur when transferring the substance from one container to another. Such operations should be well ventilated and good work practices must be established to avoid spills.

B. Pure MDA is a solid with a low vapor pressure. Grinding or heating operations increase the potential for exposure.

C. Store away from oxidizing materials.

D. Employers shall advise employees of all areas and operations where exposure to MDA could occur.

VII. Housekeeping and Hygiene Facilities

A. The workplace should be kept clean, orderly, and in a sanitary condition. The employer should institute a leak and spill detection program for operations involving MDA in order to detect sources of fugitive MDA emissions.

B. Adequate washing facilities with hot and cold water are to be provided and maintained in a sanitary condition. Suitable cleansing agents should also be provided to assure the effective removal of MDA from the skin.

VIII. Common Operations

Common operations in which exposure to MDA is likely to occur include the following: Manufacture of MDA; Manufacture of Methylene diisocyanate; Curing of epoxy resin structures; Wire coating operations; and filament winding.

Appendix C to § 1910.1048—Medical Surveillance Guidelines for MDA

I. Route of Entry

Inhalation; skin absorption; ingestion. MDA can be inhaled, absorbed through the skin, or ingested.

II. Toxicology

MDA is a suspect carcinogen in humans. There are several reports of liver disease in humans and animals resulting from acute exposure to MDA. A well documented case of an acute cardiomyopathy secondary to exposure to MDA is on record. Numerous human cases of hepatitis secondary to MDA are known. Upon direct contact MDA may also cause damage to the eyes. Dermatitis and skin sensitization have been observed.

Almost all forms of acute environmental hepatic injury in humans involve the hepatic parenchyma and produce hepatocellular jaundice. This agent produces intrahepatic cholestasis. The clinical picture consists of cholestatic jaundice, preceded or accompanied by abdominal pain, fever, and chills. Onset in about 60% of all observed cases is abrupt with severe abdominal pain. In about 30% of observed cases, the illness presented and evolved more slowly and less dramatically, with only slight abdominal pain. In about 10% of the cases only jaundice was evident. The cholestatic nature of the jaundice is evident in the prominance of itching, the histologic predominance of bile stasis, and portal inflammatory infiltration, accompanied by only slight parenchymal injury in most cases, and by the moderately elevated transaminase values. Acute, high doses, however, have been known to cause hepatocellular damage resulting in elevated SGPT, SGOT, alkaline phosphatase and bilirubin.

Absorption through the skin is rapid. MDA is metabolized and excreted over a 48-hour period. Direct contact may be irritating to the skin, causing dermatitis. Also, MDA which is deposited on the skin, is not thoroughly removed through washing.

MDA may cause bladder cancer in humans. Animal data supporting this assumption is not available nor is conclusive human data. However, human data collected on workers at a helicopter manufacturing facility where MDA is used suggest a higher incidence of bladder cancer among exposed workers.

III. Signs and Symptoms

Skin may become yellow from contact with MDA.

Repeated or prolonged contact with MDA may result in recurring dermatitis (red-itchy, cracked skin) and eye irritation. Inhalation, ingestion or absorption through the skin at high concentrations may result in hepatitis, causing symptoms such as fever and chills, nausea and vomiting, dark urine, anorexia, rash, right upper quadrant pain and jaundice. Corneal burns may occur when MDA is splashed in the eyes.

IV. Treatment of Acute Toxic Effects/Emergency Situation

If MDA gets into the eyes, immediately wash eyes with large amounts of water. If MDA is splashed on the skin, immediately wash contaminated skin with mild soap or detergent. Employee should be removed from exposure and given proper medical treatment. Medical tests required under the emergency section of the medical surveillance section (m)(4) must be conducted.

If the chemical is swallowed do not induce vomiting but remove by gastric lavage.

Appendix D to § 1910.1048—Sampling and Analytical Methods for MDA Monitoring and Measurement Procedures

Measurements taken for the purpose of determining employee exposure to MDA are best taken so that the representative average 8-hour exposure may be determined from a single 8-hour sample or two (2) 4-hour samples. Short-time interval samples (or grab samples) may also be used to determine average exposure level if a minimum of five measurements are taken in a random manner over the 8-hour work shift. Random sampling means that any portion of the work shift has the same chance of being sampled as any other. The arithmetic average of all such random samples taken on one work shift is an estimate of an employee's average level of exposure for that work shift. Air samples should be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

There are a number of methods available for monitoring employee exposures to MDA.

The method OSHA currently uses is included below.

The employer however has the obligation of selecting any monitoring method which meets the accuracy and precision requirements of the standard under his unique field conditions. The standard requires that the method of monitoring must have an accuracy, to a 95 percent confidence level, of not less than plus or minus 25 percent for the select PEL.

OSHA Methodology

Sampling procedure

Apparatus

Samples are collected by use of a personal sampling pump that can he calibrated within ± 5% of the recommended flow rate with the sampling filter in line.

Samples are collected on 37 mm Gelman type A/E glass fiber filters treated with sulfuric acid. The filters are prepared by soaking each filter with 0.5 mL of 0.26N H_2SO_4. (0.26N H_2SO_4 can be prepared by diluting 1.5 mL of 36N H_2SO_4 to 200 mL with deionized water.) The filters are dried in an oven at 100 degrees C for one hour and then assembled into two piece 37 mm polystyrene cassettes with backup pads. The cassettes are sealed with shrink bands and the ends are plugged with plastic plugs.

After sampling, the filters are carefully removed from the cassettes and individually transferred to small vials containing approximately 2 mL deionized water. The vials must be tightly sealed. The water can be added before or after the filters are transferred. The vials must be sealable and capable of holding at least 7 mL of liquid. Small glass scintillation vials with caps containing Teflon liners are recommended.

Reagents

Deionized water is needed for addition to the vials.

Sampling technique

Immediately before sampling, remove the plastic plugs from the filter cassettes.

Attach the cassette to the sampling pump with flexible tubing and place the cassette in the employee's breathing zone.

After sampling, seal the cassettes with plastic plugs until the filters are transferred to the vials containing deionized water.

At some convenient time within 10 hours of sampling, transfer the sample filters to vials.

Seal the small vials lengthwise.

Submit at least one blank filter with each sample set. Blanks should be handled in the same manner as samples, but no air is drawn through them.

Record sample volumes (in L of air) for each sample, along with any potential interferences.

Retention efficiency

A retention efficiency study was performed by drawing 100 L of air (80% relative humidity) at 1 L/min through sample filters that had been spiked with 0.814 μg MDA. Instead of using backup pads, blank acid-treated filters were used as backups in each cassette. Upon analysis, the top filters were found to have an average of 91.8% of the spiked amount. There was no MDA found on the bottom filters, so the amount lost was probably due to the slight instability of the MDA salt.

Extraction efficiency

The average extraction efficiency for six filters spiked at the target concentration is 99.6%.

The stability of extracted and derivatized samples was verified by reanalyzing the above six samples the next day using fresh standards. The average extraction efficiency for the reanalyzed samples is 98.7%.

Recommended air volume and sampling rate

The recommended air volume is 100 L.

The recommended sampling rate is l L/min.

Interferences (sampling)

MDI appears to be a positive interference. It was found that when MDI was spiked onto an acid-treated filter, the MDI converted to MDA after air was drawn through it.

Suspected interferences should be reported to the laboratory with submitted samples.

Safety precautions (sampling)

Attach the sampling equipment to the employees so that it will not interfere with work performance or safety.

Follow all safety procedures that apply to the work area being sampled.

Analytical procedure

Apparatus: The following are required for analysis.

A GC equipped with an electron capture detector. For this evaluation a Tracor 222 Gas Chromatograph equipped with a Nickel 63 High Temperature Electron Capture Detector and a Linearizer was used.

A GC column capable of separating the MDA derivative from the solvent and interferences. A 6 ft X 2 mm ID glass column packed with 3% OV-101 coated on 100/120 Gas Chrom Q was used in this evaluation.

A electronic integrator or some other suitable means of measuring peak areas or heights.

Small resealable vials with Teflon-lined caps capable of holding 4 mL.

A dispenser or pipet for toluene capable of delivering 2.0 mL.

Pipets (or repipets with plastic or Teflon tips) capable of delivering 1 mL for the sodium hydroxide and buffer solutions.

A repipet capable of delivering 25 uL HFAA.

Syringes for preparation of standards and injection of standards and samples into a GC.

Volumetric flasks and pipets to dilute the pure MDA in preparation of standards.

Disposable pipets to transfer the toluene layers after the samples are extracted.

Reagents

0.5 NaOH prepared from reagent grade NaOH.

Toluene, pesticide grade. Burdick and Jackson distilled in glass toluene was used.

Heptafluorobutyric acid anhydride (HFAA). HFAA from Pierce Chemical Company was used.

pH 7.0 phosphate buffer, prepared from 136 g potassium dihydrogen phosphate and l L deionized water. The pH is adjusted to 7.0 with saturated sodium hydroxide solution.

4.4′-Methylenedianiline (MDA), reagent grade.

Standard Preparation

Concentrated stock standards are prepared by diluting pure MDA with toluene. Analytical standards are prepared by injecting uL amounts of diluted stock standards into vials that contain 2.0 mL toluene.

25 uL HFAA are added to each vial and the vials are capped and shaken for 10 seconds.

After 10 min, l mL of buffer is added to each vial.

The vials are recapped and shaken for 10 seconds.

After allowing the layers to separate, aliquots of the toluene (upper) layers are removed with a syringe and analyzed by GC.

Analytical standard concentrations should bracket sample concentrations. Thus, if samples fall out of the range of prepared standards, additional standards must be prepared to ascertain detector response.

Sample Preparation

The sample filters are received in vials containing deionized water.

1 mL of 0.5N NaOH and 2.0 mL toluene are added to each vial.

The vials are recapped and shaken for 10 min.

After allowing the layers to separate, approximately l mL aliquots of the toluene (upper) layers are transferred to separate vials with clean disposable pipets.

The toluene layers are treated and analyzed.

Analysis

GC conditions:	
Zone temperatures.	Column 220—degrees C.
	Injector—235 degrees C. Detector—335 degrees C.
Gas flows, Ar/CH ^{4}. (95/5)............	Column—28 mL/min. Purge—40 mL/min.
Injection volume:.	5.0 uL.
Column:	6 ft X ⅛ in ID glass, 3% OV-101 on 100/120 Gas Chrom Q.
Retention time of MDA derivative:.	3.5 min.

Chromatogram

Peak areas or heights are measured by an integrator or other suitable means.

A calibration curve is constructed by plotting response (peak areas or heights) of standard injections versus μg of MDA per sample. Sample concentrations must be bracketed by standards.

Interferences (analytical)

Any compound that gives an electron capture detector response and has the same general retention time as the HFAA derivative of MDA is a potential interference. Suspected interferences reported to the laboratory with submitted samples by the industrial hygienist must be considered before samples are derivatized.

GC parameters may be changed to possibly circumvent interferences.

Retention time on a single column is not considered proof of chemical identity. Analyte identity should be confirmed by GC/MS if possible.

Calculations

The analyte concentration for samples is obtained from the calibration curve in terms of µg MDA per sample. The extraction efficiency is 100%. If any MDA is found on the blank, that amount is subtracted from the sample amounts. The air concentrations are calculated using the following formulae.

$\mu g/m^3 = (\mu g \text{ MDA per sample}) (1{,}000)/(\text{L of air sampled})$

$\text{ppb} = (\mu g/m^3 (24.46)/(198.3) = (\mu g/m^3)(0.1233)$ where 24.46 is the molar volume at 25 degrees C and 760 mm Hg

Safety Precautions (analytical)

Avoid skin contact and inhalation of all chemicals.

Restrict the use of all chemicals to a fume hood if possible.

Wear safety glasses and a lab coat at all times while in the lab area.

Appendix E to §1910.1048—Qualitative and Quantitative Fit Testing Procedures

Qualitative Fit Test Protocols

I. Isoamyl Acetate (banana oil) Protocol.

A. Odor threshold screening.

1. Three 1-liter glass jars with metal lids (e.g. Mason or Bell jars) are required.

2. Odor-free water (e.g. distilled or spring water) at approximately 25° C shall be used for the solutions.

3. The isoamyl acetate (IAA) (also known as isopentyl acetate) stock solution is prepared by adding 1 cc of pure IAA to 800 cc of odor free water in a 1-liter jar and shaking for 30 seconds. This solution shall be prepared new at least weekly.

4. The screening test shall be conducted in a room separate from the room used for actual fit testing. The two rooms shall be well ventilated so that circulation of the test solution does not occur and cross contaminate the testing different sites.

5. The odor test solution is prepared in a second jar by placing 0.4 cc of the stock solution into 500 cc of odor free water using a clean dropper or pipette. Shake for 30 seconds and allow to stand for two to three minutes so that the IAA concentration above the liquid may reach equilibrium. This solution may be used for only one day.

6. A test blank is prepared in a third jar by adding 500 cc of odor free water.

7. The odor test and test blank jars shall be labelled 1 and 2 for jar identification.

8. The following instructions shall be typed on a card and placed on the table in front of the two test jars (i.e. 1 and 2): "The purpose of this test is to determine if you can smell banana oil at a low concentration. The two bottles in front of you contain water. One of these bottles also contains a small amount of banana oil. Be sure the covers are on tight, then shake each bottle for two seconds. Unscrew the lid of each bottle, one at a time, and sniff at the mouth of the bottle. Indicate to the test conductor which bottle contains banana oil."

9. The mixtures used in the IAA odor detection test shall be prepared in an area separate from where the test is performed, in order to prevent olfactory fatigue in the subject.

10. If the test subject is unable to correctly identify the jar containing the odor test solution, the IAA qualitative fit test may not be used.

11. If the test subject correctly identifies the jar containing the odor test solution, the test subject may proceed to respirator selection and fit testing.

B. Respirator Selection.

1. The test subject shall be allowed to pick the most comfortable respirator from a selection including respirators of various sizes from different manufacturers. The selection shall include at least three sizes of elastomeric half facepieces, from at least two manufacturers.

2. The selection process shall be conducted in a room separate from the fit-test chamber to prevent odor fatigue. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine a "comfortable" respirator. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, as it is only a review.

3. The test subject should understand that the employee is being asked to select the respirator which provides the most comfortable fit.

4. The test subject holds each facepiece up to the face and eliminates those which obviously do not give a comfortable fit. Normally, selection will begin with a half-mask and if a comfortable fit cannot be found, the subject will be asked to test the full facepiece respirators. (A small percentage of users will not be able to wear any half-mask.)

5. The more comfortable facepieces are noted: the most comfortable mask is donned and *worn at least five minutes* to assess comfort. All donning and adjustments of the facepiece shall be performed by the test subject without assistance from the test conductor or other person. Assistance in assessing comfort can be given by discussing the points in #6 below. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include reviewing the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator after donning:

- Positioning of mask on nose.
- Room for eye protection.
- Room to talk.
- Positioning mask on face and cheeks.

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

- Chin properly placed.
- Strap tension.
- Fit across nose bridge.
- Distance from nose to chin.
- Tendency to slip.
- Self-observation in mirror.

8. The test subject shall perform the conventional negative- or positive-pressure fit checks (e.g., see ANSI Z88.2–1980A7). Before beginning the negative- or positive-pressure test, the subject shall be told to "seat" the mask by rapidly moving the head from side—to-side and up and down, while taking a few deep breaths.

9. The test subject is now ready for fit testing.

10. After passing the fit test, the test subject shall be questioned again regarding the comfort of the respirator. If the respirator has become uncomfortable, another model of respirator shall be tried.

11. The employee shall be given the opportunity to select a different facepiece and to be retested if the chosen facepiece becomes increasingly uncomfortable at any time.

C. Fit test

1. The fit test chamber shall be similar to a clear 55 gallon drum liner suspended inverted over a 2-foot diameter frame, so that the top of chamber is about 6 inches above the test subject's head. The inside top center of the chamber shall have a small hook attached.

2. Each respirator used for the fitting and fit testing shall be equipped with organic vapor cartridges or offer protection against organic vapors. The cartridges or canisters shall be replaced as necessary to maintain the effectiveness of the respirator.

3. After selecting, donning, and properly adjusting a respirator, the test subject shall wear it to the fit testing room. This room shall be separate from the room used for odor threshold screening and respirator selection, and shall be well ventilated, as by an exhaust fan or lab hood, to prevent general room contamination.

4. A copy of the following test exercises and Rainbow Passage shall be taped to the inside of the test chamber:

Test Exercises

i. Breathe normally.

ii. Breathe deeply. Be certain breaths are *deep* and *regular*.

iii. Turn head all the way from one side to the other. Inhale on each side. Be certain movement is complete. Do not bump the respirator against the shoulders.

iv. Nod head up-and-down. Inhale when head is in the full up position (looking toward ceiling). Be certain motions are complete and made about every second. Do not bump the respirator on the chest.

v. Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it aloud will result in a wide range of facial movements, and thus be useful to satisfy this requirement. Alternative passages which serve the same purpose may also be used.

vi. Jog in place.

vii. Breathe normally.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

5. Each test subject shall wear the respirator for at a least 10 minutes before starting the fit test.

6. Upon entering the test chamber, the test subject shall be given a 6 inch by 5 inch piece of paper towel or other porous absorbent single ply material, folded in half and wetted with three-quarters of one cc of pure IAA. The test subject shall hang the wet towel on the hook at the top of the chamber.

7. Allow two minutes for the IAA test concentration to be reached before starting the fit test exercises.

8. Each exercise described in #4 above shall be performed for at least one minute.

9. If at any time during the test, the subject detects the banana-like odor of IAA, the test has failed. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.

10. If the test is failed, the subject shall return to the selection room and remove the respirator, repeat the odor sensitivity test, select and put on another respirator, return to the test chamber, and again begin the procedure described in the c(4) through c(8) above. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait about 5 minutes before retesting. Odor sensitivity will usually have returned by this time.

11. If a person cannot pass the fit test described above wearing a half-mask respirator from the available selection, full facepiece models must be used.

12. When a respirator is found that passes the test, the subject must break the faceseal and take a breath before exiting the chamber. This is to assure that the reason the test subject is not smelling the IAA is the good fit of the respirator facepiece seal and not olfactory fatigue.

13. When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test. To keep the area from becoming contaminated, the used towels shall be kept in a self-sealing bag so there is no significant IAA concentration buildup in the test chamber during subsequent tests.

14. Persons who have successfully passed this fit test with a half-mask respirator may be assigned the use of the test respirator in atmospheres with up to 10 times the PEL. In atmospheres greater than 10 times, and less than 10 times the PEL (up to 50 ppm), the subject must pass the IAA test using a full face negative pressure respirator. (The concentation of the IAA inside the test chamber must be increased by five times for QLFT of the full facepiece.)

15. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

16. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as a powered air-purifying respirator, supplied air respirator, or self-contained breathing apparatus.

17. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respiratory diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

18. Qualitative fit testing shall be repeated at least every 12 months.

19. In addition, because the sealing of the respirator may be affected, qualitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e.; multiple extractions without prothesis, or acquiring dentures,

(4) Reconstructive or cosmetic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

D. Recordkeeping

A summary of all test results shall be maintained by the employer for 3 years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of the test conductor.

(4) Respirators selected (indicate manufacturer, model, size and approval number).

(5) Testing agent.

II. Saccharin Solution Aerosol Protocol.

A. Respirator Selection.

Respirators shall be selected as described in section IB (respirator selection) above, except that each respirator shall be equipped with a particulate filter.

B. Taste Threshold Screening.

1. An enclosure placed over the head and shoulders shall be used for threshold screening (to determine if the individual can taste saccharin) and for fit testing. The enclosure shall be approximately 12 inches in diameter by 14 inches tall with at least the front clear to allow free movement of the head when a respirator is worn.

2. The test enclosure shall have a three-quarter inch hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

3. The entire screening and testing procedure shall be explained to the test subject prior to conducting the screening test.

4. During the threshold screening test, the test subject shall don the test enclosure and breathe with open mouth with tongue extended.

5. Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the threshold check solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

6. The threshold check solution consists of 0.83 grams of sodium saccharin, USP in water. It can be prepared by putting 1 cc of the test solution (see C 7 below) in 100 cc of water.

7. To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then is released and allowed to fully expand.

8. Ten squeezes of the nebulizer bulb are repeated rapidly and then the test subject is asked whether the saccharin can be tasted.

9. If the first response is negative, ten more squeezes of the nebulizer bulb are repeated rapidly and the test subject is again asked whether the saccharin can be tasted.

10. If the second response is negative ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin can be tasted.

11. The test conductor will take note of the number of squeezes required to elicit a taste response.

12. If the saccharin is not tasted after 30 squeezes (Step 10), the saccharin fit test cannot be performed on the test subject.

13. If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

14. Correct use of the nebulizer means that approximately 1 cc of liquid is used at a time in the nebulizer body.

15. The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least every four hours.

C. Fit test.

1. The test subject may not eat, drink (except plain water), or chew gum for 15 minutes before the test.

2. The test subject shall don and adjust the respirator without assistance from any person.

3. The fit test uses the same enclosure described in IIB above.

4. Each test subject shall wear the respirator for a least 10 minutes before starting the fit test. (a) This would be an appropriate time to talk with the test subject: to explain the fit test, the importance of cooperation and, the purpose for the head exercises; or to demonstrate some of the exercises. (b) The test subject shall perform the conventional negative or positive pressure fit tests (See Ansi Z88.2 1980 A7).

5. The test subject shall enter the enclosure while wearing the respirator selected in section IB above. This respirator shall be properly adjusted and equipped with a particulate filter.

6. A second DeVilbiss Model 40 Inhalation Medication Nebulizer is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

7. The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 cc of warm water.

8. As before, the test subject shall breathe with mouth open and tongue extended.

9. The nebulizer is inserted into the hole in the front of the enclosure and the fit test solution is sprayed into the enclosure using the same technique as for the taste threshold screening and the same number of squeezes required to elicit a taste response in the screening. (See B8 through Bl0 above).

10. After generation of the aerosol read the following instructions to the test subject. The test subject shall perform the exercises for one minute each.

i. Breathe normally.

ii. Breathe deeply. Be certain breaths are *deep* and *regular.*

iii. Turn head all the way from one side to the other. Be certain movement is complete. Inhale on each side. Do not bump the respirator against the shoulders.

iv. Nod head up-and-down. Be certain motions are complete. Inhale when head is in the full up position (when looking toward the ceiling). Do not bump the respirator on the chest.

v. Talk. Talk aloud and slowly. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements, and thus be useful to satisfy this requirement.

vi. Jog in place.

vii. Breathe normally.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.

11. At the beginning of each exercise, the aerosol concentration shall be replenished using one-half the number of squeezes as initially described in C9.

12. The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected.

13. If the saccharin is detected the fit is deemed unsatisfactory and a different respirator shall be tried.

14. Successful completion of the test protocol shall allow the use of the half mask tested respirator in contaminated atmospheres up to 10 times the PEL of MDA. In other words this protocol may be used to assign protection factors no higher than ten.

15. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

16. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as powered air-purifying respirators, supplied air respirator, or self-contained breathing apparatus.

17. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respirator diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

18. Qualitative fit testing shall be repeated at least every 12 months.

19. In addition, because the sealing of the respirator may be affected, qualitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e.; multiple extractions without prosthesis, or acquiring dentures,

(4) Reconstructive or cosmetic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

D. Recordkeeping

A summary of all test results shall be maintained by the employer for 3 years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of test conductor.

(4) Respirators selected (indicate manufacturer, model, size and approval number).

(5) Testing agent.

III. Irritant Fume Protocol

A. Respirator selection.

Respirators shall be selected as described in section IB above, except that each respirator shall be equipped with a combination of high-efficiency and acid-gas cartridges.

B. Fit test.

1. The test subject shall be allowed to smell a weak concentration of the irritant smoke to familiarize the subject with the characteristic odor.

2. The test subject shall properly don the respirator selected as above, and wear it for at least 10 minutes before starting the fit test.

3. The test conductor shall review this protocol with the test subject before testing.

4. The test subject shall perform the conventional positive pressure and negative pressure fit checks (see ANSI Z88.2 1980). Failure of either check shall, be cause to select an alternate respirator.

5. Break both ends of a ventilation smoke tube containing stannic oxychloride, such as the MSA part #5645, or equivalent. Attach a short length of tubing to one end of the smoke tube. Attach the other end of the smoke tube to a low pressure air pump set to deliver 200 milliliters per minute.

6. Advise the test subject that the smoke can be irritating to the eyes and instruct the subject to keep the eyes closed while the test is performed.

7. The test conductor shall direct the stream of irritant smoke from the tube towards the faceseal area of the test subject. The person conducting the test shall begin with the tube at least 12 inches from the facepiece and gradually move to within one inch, moving around the whole perimeter of the mask.

8. The test subject shall be instructed to do the following exercises while the respirator is being challenged by the smoke. Each exercise shall be performed for one minute.

i. Breathe normally.

ii. Breathe deeply. Be certain breaths are *deep* and *regular.*

iii. Turn head all the way from one side to the other. Be certain movement is complete. Inhale on each side. Do not bump the respirator against the shoulders.

iv. Nod head up-and-down. Be certain motions are complete and made every second. Inhale when head is in the full up position (looking toward ceiling). Do not bump the respirator against the chest.

v. Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements, and thus be useful to satisfy this requirement. Alternative passages which serve the same purpose may also be used.

Rainbow passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two end apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.

vi. Jogging in Place.

vii. Breathe normally.

9. The test subject shall indicate to the test conductor if the irritant smoke is detected. If smoke is detected, the test conductor shall stop the test. In this case, the tested respirator is rejected and another respirator shall be selected.

10. Each test subject passing the smoke test (i.e. without detecting the smoke) shall be given a sensitivity check of smoke from the same tube to determine if the test subject reacts to the smoke. Failure to evoke a response shall void the fit test.

11. Steps B4, B9, Blo of this fit test protocol shall be performed in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the test agents.

12. Respirators successfully tested by the protocol may be used in contaminated atmospheres up to ten times the PEL of MDA.

13. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

14. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as powered air-purifying respirators, supplied air respirator, or self-contained breathing apparatus.

15. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respirator diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

16. Qualitative fit testing shall be repeated at least every 12 months.

17. In addition, because the sealing of the respirator may be affected, qualitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e.; multiple extractions without prothesis, or acquiring dentures,

(4) Reconstructive or cosmetic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

C. Recordkeeping

A summary of all test results shall be maintained by the employer for 3 years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of test conductor.

(4) Respirators selected (indicate manufacturer, model, size and approval number).

(5) Testing agent.

Quantitative Fit Test Procedures

1. *General.*

a. The method applies to the negative-pressure nonpowered air-purifying respirators only.

b. The employer shall assign an individual (with help as needed) who shall assume the full responsibility for implementing the respirator quantitative fit test program.

2. *Definition.*

a. "Quantitative Fit Test" means the measurement of the effectiveness of a respirator seal in excluding the ambient atmosphere. The test is performed by dividing the measured concentration of challenge agent in a test chamber by the measured concentration of the challenge agent inside the respirator facepiece when the normal air purifying element has been replaced by an essentially perfect purifying element.

b. "Challenge Agent" means the air contaminant introduced into a test chamber so that its concentration inside and outside the respirator may be compared.

c. "Test Subject" means the person wearing the respirator for quantitative fit testing.

d. "Normal Standing Position" means standing erect and straight with arms down along the sides and looking straight ahead.

e. "Fit Factor" means the ratio of challenge agent concentration outside with respect to the inside of a respirator inlet covering (facepiece or enclosure).

3. *Apparatus.*

a. *Instrumentation.* Corn oil, sodium chloride or other appropriate aerosol generation, dilution, and measurement systems shall be used for quantitative fit test.

b. *Test chamber.* The test chamber shall be large enough to permit all test subjects to freely perform all required exercises without distributing the challenge agent concentration or the measurement apparatus. The test chamber shall be equipped and constructed so that the challenge agent is effectively isolated from the ambient air jet uniform in concentration throughout the chamber.

c. When testing air-purifying respirators, the normal filter or cartridge element shall be replaced with a high-efficiency particular filter supplied by the same manufacturer.

d. The sampling instrument shall be selected so that a strip chart record may be made of the test showing the rise and fall of challenge agent concentration with each inspiration and expiration at fit factors of at least 2,000.

e. The combination of substitute air-purifying elements (if any), challenge agent, and challenge agent concentration in the test chamber shall be such that the test subject is not exposed in excess of PEL to the challenge agent at any time during the testing process.

f. The sampling port on the test specimen respirator shall be placed and constructed so that there is no detectable leak around the port, a free air flow is allowed into the sampling line at all times and so there is no interference with the fit or performance of the respirator.

g. The test chamber and test set-up shall permit the person administering the test to observe one test subject inside the chamber during the test.

h. The equipment generating the challenge atmosphere shall maintain the concentration of challenge agent constant within a 10 percent variation for the duration of the test.

i. The time lag (interval between an event and its being recorded on the strip chart) of the instrumentation may not exceed 2 seconds.

j. The tubing for the test chamber atmosphere and for the respirator sampling port shall be the same diameter, length and material. It shall be kept as short as possible. The smallest diameter tubing recommended by the manufacturer shall be used.

k. The exhaust flow from the test chamber shall pass through a high-efficiency filter before release to the room.

1. When sodium chloride aerosol is used, the relative humidity inside the test chamber shall not exceed 50 percent.

4. *Procedural Requirements*

a. The fitting of half-mask respirators should be started with those having multiple sizes and a variety of interchangeable cartridges and canisters such as the MSA Comfr II–M, Norton M, Survivair M A–O M or Scott–M. Use either of the tests outlined below to assure that the facepiece is properly adjusted.

(1) *Positive pressure test.* With the exhaust port(s) blocked the negative pressure of slight inhalation should remain constant for several seconds.

(2) *Negative pressure test.* With the intake port(s) blocked the negative pressure slight inhalation should remain constant for several seconds.

b. After a facepiece is adjusted, the test subject shall wear the facepiece for at least 5 minutes before conducting a qualitive test by using either of the methods described below and using the exercise regime described in 5.a., b., c., d. and e.

(1) *Isoamyl acetate test.* When using organic vapor cartridges, the test subject who can smell the odor should be unable to detect the odor of isoamyl acetate squirted into the air near the most vulnerable portions of the facepiece seal. In a location which is separated from the test area, the test subject shall he instructed to close her/his eyes during the test period. A combination cartridge or canister with organic vapor and high-efficiency filters shall be used when available for the particular mask being tested. The test subject shall be given an opportunity to smell the odor of isoamyl acetate before the test is conducted.

(2) *Irritant fume test.* When using high-efficiency filters, the test subject should be unable to detect the odor of irritant fume (stannic chloride or titanium tetrachloride ventilation smoke tubes) squirted into the air near the most vulnerable portions of the facepiece seal. The test subject shall be instructed to close her/his eyes during the test period.

c. The test subject may enter the quantitative testing chamber only if she or he has obtained a satisfactory fit by as stated in 4.b. of this Appendix.

d. Before the subject enters the test chamber, a reasonably stable challenge agent concentration shall be measured in the test chamber.

e. Immediately after the subject enters the test chamber, the challenge agent concentration inside the respirator shall be measured to ensure that the peak penetration does not exceed 5 percent for a half-mask and 1 percent for a full facepiece.

f. A stable challenge agent concentration shall be obtained prior to the actual start of testing.

g. Respirator restraining straps may not be overtightened for testing. The straps shall be adjusted by the wearer to give a reasonably comfortable fit typical of normal use.

5. *Exercise Regime.* Prior to entering the test chamber, the test subject shall be given complete instructions as to her/his part in the test procedures. The test subject shall perform the following exercises, in the order given, for each independent test.

a. *Normal Breathing (NB).* In the normal standing position, without talking, the subject shall breathe normally for at least one minute.

b. *Deep Breathing (DB).* In the normal standing position the subject shall do deep breathing for at least one minute pausing so as not to hyperventilate.

c. *Turning head side to side (SS).* Standing in place the subject shall slowly turn his head from side between the extreme positions to each side. The head shall be held at each extreme position for at least 5 seconds. Perform for at least five complete cycles.

d. *Moving head up and down (UD).* Standing in place, the subject shall slowly move his head up and down between the extreme position straight up and the extreme position straight down. The head shall be held at each extreme position for at least 5 seconds. Perform for at least five complete cycles.

e. *Reading (R).* The subject shall read out slowly and loud so as to be heard clearly by the test conductor or monitor. The test subject shall read the "rainbow passage" at the end of this section.

f. *Grimace (G).* The test subject shall grimace, smile, frown, and generally contort the face using the facial muscles. Continue for at least 15 seconds.

g. *Bend over and touch toes (B).* The test subject shall bend at the waist and touch toes and return to upright position. Repeat for at least one minute.

h. *Jogging in place (J).* The test subject shall perform jog in place for at least one minute.

i. *Normal Breathing (NB).* In the normal standing position, without talking, the subject shall breathe normally for at least one minute.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

6. *Termination of Tests.* The test shall be terminated whenever any single peak penetration exceeds 5 percent for half-masks and 1 percent for full facepieces. The test subject may be refitted and retested. If two of the three required tests are terminated, the fit shall be deemed inadequate. (See paragraph 4.h.).

7. *Calculation of Fit Factors.*

a. The fit factor determined by the quantitative fit test equals the average concentration inside the respirator.

b. The average test chamber concentration is the arithmetic average of the test chamber concentration at the beginning and at the end of the test.

c. The average peak concentration of the challenge agent inside the respirator shall be the arithmetic average peak concentrations for each of the nine exercises of the test which are computed as the arithmetic average of the peak concentrations found for each breath during the exercise.

d. The average peak concentration for an exercise may be determined graphically if there is not a great variation in the peak concentrations during a single exercise.

8. *Interpretation of Test Results.* The fit factor measured by the quantitative fit testing shall be the lowest of the three protection factors resulting from three independent tests.

9. *Other Requirements*

a. The test subject shall not be permitted to wear a half mask or full facepiece if the minimum fit factor of 250 or 1,250, respectively, cannot be obtained. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as powered air-purifying respirators, supplied air respirator, or self-contained breathing apparatus.

b. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

c. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician to determine whether the test subject can wear a respirator while performing her or his duties.

d. The test subject shall be given the opportunity to wear the assigned respirator for one week. If the respirator does not provide a satisfactory fit during actual use, the test subject may request another QNFT which shall be performed immediately.

e. A respirator fit factor card shall be issued to the these subject with the following information:

(1) Name.

(2) Date of fit test.

(3) Protection factors obtained through each manufacturer, model and approval number of respirator tested.

(4) Name and signature of the person that conducted the test.

f. Filters used for qualitative or quantitative fit testing shall be replaced weekly, whenever increased breathing resistance is encountered, or when the test agent has altered the integrity of the filter media.

Organic vapor cartridges/canisters shall be replaced daily or sooner if there is any indication of breakthrough by the test agent.

10. *Retesting.* In addition, because the sealing of the respirator may be affected, quantitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e.; multiple extractions without prothesis, or acquiring dentures,

(4) Reconstructive or cosmetic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

11. *Recordkeeping.*

a. A summary of all test results shall be maintained in for three years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of the test conductor.

(4) Fit factors obtained from every respirator tested (indicate manufacturer, model, size and approval number).

b. A copy of all test data including the strip chart and results shall be kept for at least five years.

(xii) Recommended Standands for the Construction Industry

PART 1926—[AMENDED]

Part 1926 of title 29 of the Code of Federal Regulations is therefore proposed to be amended as follows:

By adding a new § 1926.59 to read as follows:

§ 1926.59 Methylenedianiline.

(a) *Scope and application.* This section applies to all construction work as defined in 29 CFR 1910.12(b), including but not limited to the following:

(1) Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain MDA;

(2) Installation or the finishing of surfaces with products containing MDA;

(3) MDA spill/emergency cleanup at construction sites; and

(4) Transportation, disposal, storage, or containment of MDA or products containing MDA on the site or location at which construction activities are performed.

(b) Definitions.

"*Action level*" means a concentration of airborne MDA of ½ the PEL calculated as an eight (8)-hour time-weighted average.

"*Assistant Secretary*" means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

"*Authorized person*" means any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under paragraph (g) of this section, or any other person authorized by the Act or regulations issued under the Act.

"*Competent person*" means one who is capable of identifying existing hazards in the workplace and who has the authority to take prompt corrective measures to eliminate them, as specified in 19 CFR 1926.32 (f). The duties of the competent person include at least the following: establishing the engineering controls and work practices, supervising any employee exposure monitoring required by the standard; ensuring that all employees working within a regulated area wear the proper protective equipment and clothing, are trained in the use of appropriate methods of exposure control, and use the hygiene facilities and decontamination procedures specified in the standard; making inspections of personal protective equipment and clothing to insure their adequacy; ensuring that engineering controls in use are functioning properly; and ensuring that the proper procedures are followed in emergency situations.

"*Container*" means any barrel, bottle, can, cylinder, drum, reaction vessel, storage tank, commercial packaging or the like, but does not include piping systems.

"*Decontamination area*" means an area outside of but as near as practical to the regulated area, consisting of an equipment storage area, wash area, and clean change area, which is used for the decontamination of workers, materials, and equipment contaminated with MDA.

"*Director*" means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee.

"*Emergency*" means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which results in an unexpected and potentially hazardous release of MDA.

"*Employee exposure*" means exposure to MDA which would occur if the employee were not using personal protective equipment and clothing.

"*Equipment area* (change area)" means a contaminated area located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

4,4'-Methylenedianiline or "MDA" means the chemical, 4,4'-diaminodiphenylmethane, having a Chemical Abstracts Service number of 101–77–9, in gaseous, liquid, or solid form. The definition also includes the salts of MDA. The definition includes MDA contained in liquid mixtures and the MDA vapors released by these liquids. The definition does not include unreacted MDA, physically bound, such that it is incapable of releasing MDA into the workplace at levels greater than the action level or posing a dermal absorption hazard.

"*Objective and historical data*" means monitoring data for construction jobs that are substantially similar. The data must be scientifically sound, the characteristics of the MDA containing material must be similar and the environmental conditions comparable.

"*Regulated Area*" means an area where airborne concentrations of MDA exceed, or can reasonably be expected to exceed, the permissible exposure limit or where the potential for dermal exposure exists. Unauthorized individuals are prohibited from entering these areas. Smoking, drinking, eating, and application of cosmetics are also prohibited in this area. Personal protective equipment and clothing may be required.

"*STEL*" means short term exposure limit as determined by any 15-minute sample period. At no time can the PEL be exceeded.

(c) *Permissible exposure limits.* The employer shall assure that no employee is exposed to an airborne concentration of MDA in excess of ten parts per billion (10 ppb) as an 8-hour time-weighted average and a STEL of one hundred parts per billion (100 ppb) sampled over any 15 minute period.

(d) *Employee rotation.* The employer shall not use employee rotation as a means of compliance with the permissible exposure limits prescribed in paragraph (c) of this section.

(e) *Communication among employers.* On multi-employer worksites, an employer performing work involving the application of MDA or materials containing MDA for which establishment of one or more regulated areas is required shall inform other employers on the site of the nature of the employer's work with MDA and of the existence of, and requirements pertaining to, regulated areas.

(f) *Emergency situations*—(1) *Written plan.* (i) A written plan for emergency situations shall be developed for each workplace where there is a possibility of an emergency. Appropriate portions of the plan shall be implemented in the event of an emergency.

(ii) The plan shall specifically provide that employees engaged in correcting emergency conditions shall be equipped with the appropriate personal protective equipment and clothing as required in paragraphs (j) and (k) of this section until the emergency is abated.

(iii) The plan shall specifically include provisions for alerting and evacuating affected employees as well as the elements prescribed in 29 CFR 1910.38, "Employee emergency plans and fire prevention plans."

(2) *Alerting employees.* Where there is the possibility of employee exposure to MDA due to an emergency, means shall be developed to promptly alert employees who have the potential to be directly exposed. Affected employees not engaged in correcting emergency conditions shall be evacuated immediately in the event that an emergency occurs. Means shall also be developed for alerting other employees who may be exposed as a result of the emergency.

(g) *Exposure monitoring*—(1) *General.* (i) Determinations of employee exposure shall be made from breathing zone air samples that are representative of each employee's exposure to airborne MDA over an eight (8) hour period.

(ii) Representative employee exposure shall be determined on the basis of one or more samples representing full shift exposure for each shift for each job classification in each work area where exposure to MDA may occur.

(iii) Where the employer can document that exposure levels are equivalent for similar operations in different work shifts, the employer shall only be required to determine representative employee exposure for that operation during one shift.

(2) *Initial monitoring.* Each employer who has a workplace or work operation covered by this standard shall perform initial monitoring to determine accurately the airborne concentrations of MDA to which employees may be exposed * * * except where the employer relies on objective or historical data in lieu of the results obtained from initial monitoring to determine employee exposure.

(3) *Periodic monitoring and monitoring frequency.* (i) If the monitoring required by paragraph (e)(1) of this section reveals employee exposure at or above the action level, but at or below the PEL, the employer shall repeat such monitoring for each such employee at least every six (6) months.

(ii) If the monitoring required by paragraph (e)(1) of this section reveals employee exposure above the PEL, the employer shall repeat such monitoring for each such employee at least every three (3) months.

(iii) The employer may alter the monitoring schedule from every three months to every six months for any employee for whom two consecutive measurements taken at least 7 days apart indicate that the employee exposure has decreased to below the PEL but above the action level.

(4) *Termination of monitoring.* (i) If the initial monitoring required by paragraph (e)(2) of this section reveals employee exposure to be below the action level, the employer may discontinue the monitoring for that employee, except as otherwise required by paragraph (g)(5) of this section.

(ii) If the periodic monitoring required by paragraph (g)(3) of this section reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level the employer may discontinue the monitoring for that employee, except as otherwise required by paragraph (g)(5) of this section.

(5) *Additional monitoring.* The employer shall institute the exposure monitoring required under paragraphs (g)(2) and (g)(3) of this section when there has been a change in production process, chemicals present, control equipment, personnel, or work practices which may result in new or additional exposures to MDA, or when the employer has any reason to suspect a change which may result in new or additional exposures.

(6) *Accuracy of monitoring.* Monitoring shall be accurate, to a confidence level of 95 percent, to within

plus or minus 25 percent for airborne concentrations of MDA.

(7) *Employee notification of monitoring results.* (i) The employer shall, within 15 working days after the receipt of the results of any monitoring performed under this standard, notify each employee of these results, in writing, either individually or by posting of results in an appropriate location that is accessible to affected employees.

(ii) The written notification required by paragraph (g)(7)(i) of this section shall contain the corrective action being taken by the employer or any other protective measures which have been implemented to reduce the employee exposure to or below the PEL, wherever the PEL is exceeded.

(8) *Visual monitoring.* The employer shall make routine inspections of employee dermal areas potentially exposed to MDA. If the employer determines that the employee has been exposed to MDA the employer shall:

(i) Determine the source of exposure;

(ii) Implement protective measures to correct the hazard; and

(iii) Maintain records of the corrective actions in accordance with (recordkeeping section).

(h) *Regulated Areas*—(1) *Airborne Exposures.* (i) *Establishment.* The employer shall establish regulated areas where the potential for exposure to airborne concentrations of MDA, in excess of the permissible exposure limits, exists.

(ii) *Demarcation.* Regulated areas shall be demarcated from the rest of the workplace.

(iii) *Access.* Access to regulated areas shall be limited to authorized persons.

(iv) *Personal Protective Equipment and Clothing.* Each person entering a regulated area shall be supplied with, and required to use, the appropriate personal protective clothing and equipment in accordance with paragraphs (j) and (k) of this section.

(v) *Prohibited activities.* The employer shall ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas.

(2) *Dermal Exposures.* (i) *Establishment.* Where employees are engaged in routine or non-routine processes requiring the handling, application, or use of MDA, the employer shall establish those work areas as regulated areas.

(ii) *Demarcation.* Regulated areas shall be demarcated in accordance with signs and labels of this part.

(iii) *Access.* Access to regulated areas shall be restricted so that incidental exposure of employees not actively engaged in the process does not occur.

(iv) *Personal Protective Equipment and Clothing.* Each person working in a regulated area shall be supplied with, and required to use, the appropriate personal protective clothing and equipment in accordance with paragraphs (j) and (k) of this section. When necessary, each employee entering a regulated area shall be supplied with the appropriate personal protective clothing and equipment.

(v) *Prohibited activities.* The employer shall ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated areas.

(i) *Methods of Compliance*—(1) *Engineering Controls and Work practices.* (i) The employer shall use one or any combination of the following control methods to achieve compliance with the permissible exposure limit prescribed by paragraph (c) of this section:

(A) Local exhaust ventilation equipped with HEPA filter dust collection systems;

(B) General ventilation systems;

(C) Vacuum cleaners equipped with HEPA filters; and

(D) Use of work practices or other engineering controls that the Assistant Secretary can show to be feasible.

(ii) Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the PEL, the employer shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protective devices which comply with the requirements of paragraph (j) of this section.

(2) *Prohibitions.* (i) Compressed air shall not be used to remove MDA, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.

(ii) Materials containing MDA shall not be applied by spray methods.

(3) *Employee rotation.* The employer shall not use employee rotation as a means of compliance with the exposure limit prescribed in paragraph (c) of this section.

(4) *Compliance program.* (i) The employer shall establish and implement a written program to reduce employee exposure to or below the PEL by means of engineering and work practice controls, as required by paragraph (i)(1) of this section, and by use of respiratory protection where permitted under this section.

(ii) A written compliance program shall be developed. Upon request this written program shall be furnished for examination and copying to the Assistant Secretary, the Director, affected employees and designated employee representatives. The employer shall review such plans at least once every 12 months in order to reflect the current status of the program.

(j) *Respiratory Protection.*—(1) *General.* The employer shall provide respirators, and ensure that they are used, where required by this section. Respirators shall be used in the following circumstances (The Committee recommends that this section be recodified, including the respirator table when OSHA amends § 1910.134(a)).

(i) During the time period necessary to install or implement feasible engineering and work practice controls;

(ii) In work operations such as maintenance and repair activities for which engineering and work practice controls are not feasible.

(iii) In work situations where feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the PEL; and

(iv) In emergencies.

(2) *Respirator selection.* (i) Where respirators are required or allowed under this section, the employer shall select and provide, at no cost to the employee, the appropriate respirator as specified in Table I, and shall assure that the employee uses the respirator provided.

(ii) The employer shall select respirators from among those jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health under the provisions of 30 CFR Part 11.

(iii) Any employee who cannot wear a negative pressure respirator shall be given the option of wearing a positive pressure respirator or any supplied-air respirator operated in the continuous flow or pressure demand mode.

(3) *Respirator program.* The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134 (b), (d), (e) and (f).

(4) *Respirator use.* (i) Where air-purifying respirators (cartridge or canister) are used, the employer shall replace the air purifying element as needed to maintain the effectiveness of the respirator. The employer shall ensure that each cartridge is dated at the beginning of use.

(ii) Employees who wear respirators shall be allowed to leave the regulated area to readjust the facepiece or to wash their faces and to wipe clean the facepieces on their respirators in order to minimize potential skin irritation associated with respirator use.

TABLE 1.—RESPIRATORY PROTECTION FOR MDA

Airborne concentration of MDA or condition of use	Respirator type
(a) Less than or equal to 10 x PEL	(1) Half-Mask Respirator with HEPA [1] Cartridge [2].
(b) Less than or equal to 50 x PEL	(1) Full facepiece Respirator with HEPA [1] Cartridge or Canister [3].
(c) Less than or equal to 1000 x PEL	(1) Full facepiece powered air-purifying respirator with HEPA [1] cartridges.[2]
(d) Greater than 1000 x PEL or	(1) Self-contained breathing unknown concentration apparatus with full facepiece in positive pressure mode. (2) Full facepiece positive pressure demand supplied-air respirator with auxilliary self-contained air supply.
(e) Escape	(1) Any full facepiece air-purifying respirator with HEPA [1] cartridges; [2]. (2) Any positive pressure or continuous flow self-contained breathing apparatus with full facepiece or hood.
(f) Firefighting	(1) Full facepiece self-contained breathing apparatus in positive pressure mode.

[1] High Efficiency Particulate in Air filter (HEPA) means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 micrometers or larger.

[2] Combination HEPA/Organic Vapor Cartridges shall be used whenever MDA in liquid form or a process requiring heat is used.

Note: Respirators assigned for higher environmental concentrations may be used at lower concentrations.

(5) *Respirator fit testing* (i) The employer shall perform and record the results of either quantitative or qualitative fit tests at the time of initial fitting and at least annually thereafter for each employee wearing a negative pressure respirator. The test shall be used to select a respirator facepiece which provides the required protection as prescribed in Table 1.

(ii) The employer shall follow the test protocols outlined in Appendix E of this standard for whichever type of fit testing the employer chooses.

(k) *Protective clothing*—(1) *General.* The employer shall provide and require the use of protective clothing, such as coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings for any employee exposed to MDA.

(2) *Laundering.* (i) The employer shall ensure that laundering of contaminated clothing is done so as to prevent the release of MDA.

(ii) Any employer who gives contaminated clothing to another person for laundering shall inform such person of the requirement in paragraph (i)(2)(i) of this section to effectively prevent the release of MDA.

(3) *Contaminated clothing.* Contaminated clothing shall be transported in sealed, impermeable bags, or other closed, impermeable containers, and be labeled in accordance with paragraph ( ) of this section.

(4) *Protective clothing for MDA application.* (i) The employer shall ensure that employees' work clothing is examined periodically for rips or tears that may occur during performance of work.

(ii) When rips or tears are detected, the protective equipment, or clothing shall be repaired and replaced immediately.

(l) *Hygiene facilities and practices*—(1) *General.* (i) The employer shall provide clean change areas for employees required to work in regulated areas or required by paragraph (k)(1) of this section to wear protective clothing. *Exception:* In lieu of the change area requirement specified in paragraph (1)(1)(i) of this section, the employer may permit employees engaged in small scale, short duration operations, to clean their protective clothing or dispose of the protective clothing before such employees leave the area where the work was performed.

(ii) *Change Areas.* The employer shall ensure that change areas are equipped with separate storage facilities for protective clothing and street clothing, in accordance with section 1910.141(e).

(iii) *Equipment area.* The equipment area shall be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective clothing and equipment.

(2) *Shower area.* (i) Where feasible, shower facilities shall be provided which comply with 29 CFR 1910.141(d)(3) wherever the possibility of employee exposure to airborne levels of MDA in excess of the permissible exposure limit exists.

(ii) Where the employee is exposed only to liquid mixtures containing MDA, the employer shall ensure that materials spilled on the skin are removed as soon as possible by methods which do not facilitate the dermal absorption of MDA. Shower facilities for employees exposed only in this manner may not be necessary.

(3) *Lunch areas.* (i) Whenever food or beverages are consumed at the worksite and employees are exposed to MDA the employer shall provide lunch areas were MDA levels are below the action level and where eating surfaces are free of MDA accumulations.

(ii) The employer shall ensure that employees wash their hands and faces with soap and water prior to eating, drinking, smoking, or applying cosmetics.

(iii) The employer shall ensure that employees do not enter lunch facilities with contaminated protective work clothing or equipment.

(m) *Communication of hazards to employees*—(1) *Signs and labels.* (i) The employer shall post and maintain legible signs demarcating regulated areas and entrances or accessways to regulated areas that bear the following legend:

DANGER

MDA

SUSPECT CANCER HAZARD, LIVER TOXIN

AUTHORIZED PERSONNEL ONLY, RESPIRATORS AND PROTECTIVE CLOTHING MAY BE REQUIRED TO BE WORN IN THIS AREA

(ii) The employer shall ensure that labels or other appropriate forms of warning are provided for containers of MDA within the workplace. The labels shall comply with the requirements of 29 CFR 1910.1200(f) and shall include one of the following legends:

(A) For pure MDA

DANGER

CONTAINS MDA

SUSPECT CANCER HAZARD

MAY CAUSE CANCER, LIVER TOXIN

(B) For mixtures containing MDA

DANGER

CONTAINS MDA

SUSPECT CANCER HAZARD

CONTAINS MATERIAL WHICH MAY CAUSE CANCER, LIVER TOXIN

(2) *Material safety data sheets* (MSDS). Employers shall obtain or develop, and shall provide access to their employees, to a material safety data sheet (MSDS) for MDA.

(3) *Information and training.* (i) The employer shall provide employees with information and training on MDA, in accordance with 29 CFR 1910.1200 (h), at the time of initial assignment and at least annually thereafter.

(ii) In addition to the information required under 29 CFR 1910.1200, the employer shall:

(A) Provide an explanation of the contents of this section, including appendices A and B, and indicate to employees where a copy of the standard is available,

(B) Describe the medical surveillance program required under paragraph (o) of this section, and explain the information contained in Appendix C, and

(C) Describe the medical removal provision required under paragraph (o) of this section.

(4) *Access to training materials.* (i) The employer shall make readily available to all affected employees, without cost, all written materials relating to the employee training program, including a copy of this regulation.

(ii) The employer shall provide to the Assistant Secretary and the Director, upon request, all information and training materials relating to the employee information and training program.

(n) *Housekeeping.* (1) All surfaces shall be maintained as free as practicable of visible accumulations of MDA.

(2) The employer shall institute a program for detecting MDA leaks, spills, and discharges, including regular visual inspections of operations involving liquid or solid MDA.

(3) All leaks shall be repaired and liquid or dust spills cleaned up promptly.

(4) Surfaces contaminated with MDA may not be cleaned by the use of compressed air.

(5) Shoveling, dry sweeping and other methods of dry clean-up of MDA may be used where HEPA filtered vacuuming and/or wet cleaning are not feasible or practical.

(6) Waste disposal. Waste, scrap, debris, bags, containers, equipment, and clothing contaminated with MDA shall be collected and disposed of in a manner to prevent the re-entry of MDA into the workplace,

(o) Medical surveillance—(1) *General.* (i) The employer shall make available a medical surveillance program for employees exposed to MDA accordingly:

(A) employees exposed at or above the action level for 30 or more days per year:

(B) employees who have the likelihood of dermal exposure for more than 15 days per year;

(C) employees who have been exposed in an emergency situation: and

(D) employees whom the employer has reason to believe are being dermally exposed in accordance with paragraph (g)(8) of this section.

(ii) The employer shall ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and provided without cost to the employee.

(2) *Initial examinations.* (i) Within 60 days of the effective date of this standard, or before the time of initial assignment, the employer shall provide each employee covered by paragraph (o)(1)(i) of this section with a medical examination including the following elements:

(A) A detailed history which includes: (*1*) past work exposure to MDA or any other toxic substances; (*2*) a history of drugs, alcohol, tobacco, and medication routinely taken (duration and quantity); and (*3*) a history of dermatitis, chemical skin sensitization, or previous hepatic disease.

(B) A physical examination which includes all routine physical examination parameters, skin examination, and examination for signs of liver disease.

(C) Laboratory tests including (*1*) liver function tests and (*2*) urinalysis

(D) Additional tests as necessary in the opinion of the physcian.

(ii) No initial medical examination is required if adequate records show that the employee has been examined in accordance with the requirements of this section within the previous six months prior to the effective date of this standard or prior to the date of initial assignment.

(3) *Periodic examinations.* (i) The employer shall provide each employee covered by this section with a medical examination at least annually following the initial examination. These periodic examinations shall include at least the following elements:

(A) A brief history regarding any new exposure to potential liver toxins, changes in drug, tobacco, and alcohol intake, and the appearance of physical signs relating to the liver, and the skin:

(B) The appropriate tests and examinations including liver function tests and skin examinations;

(C) Appropriate additional tests or examinations as deemed necessary by the physician.

(ii) If in the physician's opinion the results of liver function tests indicate an abnormality, the employee shall be removed from further MDA exposure in accordance with (o)(9). Repeat liver function tests shall be conducted on advice of the physician.

(4) *Emergency examinations.* If the employer determines that the employee has been exposed to a potentially hazardous amount of MDA in an emergency situation in paragraph (d) of this section, the employer shall provide medical examinations in accordance with paragraph (o)(3)(i) and (ii) above. If the results of liver function testing indicate an abnormality, the employee shall be removed in accordance with paragraph (o)(9) of this section. Repeat liver function tests shall be conducted on the advice of the physician. If the results of the tests are normal, tests must be repeated two to three weeks from the initial testing. If the results of the second set of tests are normal and on the advice of the physician, no additional testing is required.

(5) *Additional exams.* Where the employee develops signs and symptoms associated with exposure to MDA, the employer shall provide the employee with an additional medical examination including liver function tests. If the results of liver function tests indicate an abnormality, the employee shall be removed in accordance with paragraph (o)(9) of this section. Repeat liver function tests shall be conducted on the advice of the physician. If the results of the tests are normal, tests must be repeated two to three weeks from the initial testing. If the results of the second set of tests are normal and on the advice of the physician, no additional testing is required.

(6) *Multiple physician review mechanism.* (i) If the employer selects the initial physician who conducts any medical examination or consultation provided to an employee under this section, and the employee has signs or symptoms which could include an abnormal liver function test, and the employee disagrees with the opinion of the examining physician, and this opinion could affect the employee's job status, he may designate a mutually acceptable internist as a second physician:

(A) To review any findings, determinations or recommendations of the initial physician; and

(B) To conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(ii) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen (15) days after receipt of the foregoing notification, or receipt of the initial physician's written opinion, whichever is later:

(A) The employee informing the employer that he or she intends to seek a second medical opinion, and

(B) The employee initiating steps to make an appointment with a second physician.

(iii) If the findings, determinations or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve any disagreement.

(iv) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians shall designate a third physician:

(A) To review any findings, determinations or recommendations of the prior physicians: and

(B) To conduct such examinations, consultations, laboratory tests and discussions with the prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(v) The employer shall act consistent with the findings, determinations and recommendations of the second physician, unless the employer and the employee reach a mutually acceptable agreement.

(7) *Information provided to the examining physician.* (i) The employer shall provide the following information to the examining physician:

(A) A copy of this regulation and its appendices;

(B) A description of the affected employee's duties as they relate to the employee's potential exposure to MDA;

(C) The employee's current actual or representative MDA exposure level;

(D) A description of any personal protective equipment used or to be used; and

(E) Information from previous employment related medical examinations of the affected employee.

(ii) The employer shall provide the foregoing information to a second physician under this section upon request either by the second physician, or by the employee.

(8) *Physician's written opinion.* (i) For each examination under this section, the employer shall obtain, and provide the employee with a copy of, the examining physician's written opinion within 15 days of its receipt. The written opinion shall include the following:

(A) The occupationally pertinent results of the medical examination and tests;

(B) The physician's opinion concerning whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of health from exposure to MDA;

(C) The physician's recommended limitations upon the employee's exposure to MDA or upon the employee's use of protective clothing or equipment and respirators.

(D) A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions resulting from MDA exposure which require further explanation or treatment.

(ii) The written opinion obtained by the employer shall not reveal specific findings or diagnoses unrelated to occupational exposures.

(9) *Medical removal* (i) Temporary medical removal of an employee.

(A) Temporary removal resulting from Occupational Exposure. The employee shall be removed from exposure to MDA following an initial examination in accordance with paragraph (o)(2) of this section, periodic examinations in accordance with paragraph (o)(3) of this section, and additional examination in accordance with paragraph (o)(5) of this section, or an emergency situation in accordance with paragraph (f) of this section accordingly:

(*1*) When the employee exhibits signs and/or symptoms indicative of acute exposure to MDA, the employer shall remove the employee from exposure to MDA and provide the employee with medical surveillance in accordance with paragraph (o) (5) of this section. Liver function tests and physical examinations shall be provided in accordance with the provisions set forth in the medical surveillance paragraphs (o) (2) (5) of this section.

(*2*) When the examining physician determines that an employee's abnormal liver function tests are not associated with MDA exposure but that the abnormalities may be exacerbated as a result of occupational exposure to MDA.

(B) Temporary removal due to a final medical determination.

(*1*) The employer shall remove an employee from work having an exposure to MDA at or above the action level or where the potential for dermal exposure exists on each occasion that a final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to MDA.

(*2*) For the purposes of this section, the phrase "final medical determination" shall mean the outcome of the physician review mechanism or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section.

(*3*) Where a final medical determination results in any recommended special protective measures for an employee, or limitations on an employee's exposure to MDA, the employer shall implement and act consistent with the recommendation.

(ii) Return of the employee to former job status.

(A) The employer shall return an employee to his or her former job status:

(*1*) When the employee no longer shows signs or symptoms of exposure to MDA, or upon the advice of the physician.

(*2*) When a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to MDA.

(B) For the purposes of this section, the requirement that an employer return an employee to his or her former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(iii) Removal of other employee special protective measure or limitations. The employer shall remove any limitations placed on an employee or end any special protective measures provided to an employee pursuant to a final medical determination when a subsequent final medical determination indicates that the limitations or special protective measures are no longer necessary.

(iv) Employer options pending a final medical determination. Where the physician review mechanism, or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section, has not yet resulted in a final medical determination with respect to an employee, the employer shall act as follows:

(A) *Removal.* The employer may remove the employee from exposure to MDA, provide special protective measures to the employee, or place limitations upon the employee, consistent with the medical findings, determinations, or recommendations of the physician who has reviewed the employee's health status.

(B) *Return.* The employer may return the employee to his or her former job status, end any special protective measures provided to the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status, with two exceptions. If (*1*) the initial removal, special protection, or limitation of the employee resulted from a final medical determination which differed from the findings, determinations, or recommendations of the initial physician or

(*2*) The employee has been on removal status for the preceding six months as a result of exposure to MDA, then the employer shall await a final medical determination.

(v) Medical removal protection benefits— (A) *Provisions of medical removal protection benefits.* The employer shall provide to an employee up to six (6) months of medical removal protection benefits on each occasion that an employee is removed from exposure to MDA or otherwise limited pursuant to this section.

(B) *Definition of medical removal protection benefits.* For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that the employer shall maintain the earnings, seniority and other employment rights and benefits of an employee as though the employee had not been removed from normal exposure to MDA or otherwise limited.

(C) *Follow-up medical surveillance during the period of employee removal or limitations.* During the period of time that an employee is removed from normal exposure to MDA or otherwise limited, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(D) *Workers' compensation claims.* If a removed employee files a claim for workers' compensation payments for a MDA-related disability, then the employer shall continue to provide medical removal protection benefits pending disposition of the claim. To the extent that an award is made to the employee for earnings lost during the period of removal, the employer's medical removal protection obligation shall be reduced by such amount. The employer shall receive no credit for workers' compensation payments received by the employee for treatment related expenses.

(E) *Other credits.* The employer's obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or receives income from employment with anyemployer made possible by virture of the employee's removal.

(F) *Employees who do not recover within the 6 months of removal.* The employer shall take the following measures with respect to any employee removed from exposure to MDA:

(*1*) The employer shall make available to the employee a medical examination pursuant to this section to obtain a final medical determination with respect to the employee;

(*2*) The employer shall assure that the final medical determination obtained indicates whether or not the employee may be returned to his or her former job status, and if not, what steps should be taken to protect the employee's health;

(*3*) Where the final medical determination has not yet been obtained, or once obtained indicates that the employee may not yet be returned to his or hor former job status, the employer shall continue to provide medical removal protection benefit's to the employee until either the employee is returned to former job status, or a final medical determination is made that the employee is incapable of ever safely returning to his or her former job status.

(4) Where the employer acts pursuant to a final medical determination which permits the return of the employee to his or her former job status despite what would otherwise be an unacceptable liver function test, later questions concerning removing the employee again shall be decided by a final medical determination. The employer need not automatically remove such an employee pursuant to the MDA removal criteria provided by this section.

(vi) Voluntary Removal or Restriction of An Employee. Where an employer, although not required by this section to do so, removes an employee from exposure to MDA or otherwise places limitations on an employee due to the effects of MDA exposure on the employee's medical condition, the employer shall provide medical removal protection benefits to the employee equal to that required by paragraph (o)(9)(v) of this section.

(p) *Recordkeeping*—(1) *Objective data for exempted operations.* (i) Where the employer has relied on objective data that demonstrate that products made from or containing MDA are not capable of releasing MDA or do not present a dermal exposure problem under the expected conditions of processing, use, or handling to exempt such operations from the initial monitoring requirements under paragraph (g)(2) of this section, the employer shall establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

(ii) The record shall include at least the following information:

(A) The product qualifying for exemption:

(B) The source of the objective data;

(C) The testing protocol, results of testing, and/or analysis of the material for the release of MDA;

(D) A description of the operation exempted and how the data support the exemption; and

(E) Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

(iii) The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

(2) The employer may utilize the services of competent organizations such as industry trade associations and employee associations to maintain the records required by this section.

(3) *Exposure measurements.* (i) The employer shall keep an accurate record of all measurements taken to monitor employee exposure to MDA.

(ii) This record shall include at least the following information:

(A) The date of measurement;

(B) The operation involving exposure to MDA;

(C) Sampling and analytical methods used and evidence of their accuracy;

(D) Number, duration, and results of samples taken;

(E) Type of protective devices worn, if any; and

(F) Name, social security number, and exposure of the employees whose exposures are represented.

(iii) The employer shall maintain this record for at least thirty (30) years, in accordance with 29 CFR 1910.20.

(4) *Medical surveillance.* (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance by paragraph (o) of this section, in accordance with 29 CFR 1910.20.

(ii) The record shall include at least the following information:

(A) The name and social security number of the employee;

(B) A copy of the employee's medical examination results, including the medical history, questionnaire responses, results of any tests, and physician's recommendations;

(C) Physician's written opinions;

(D) Any employee medical complaints related to exposure to MDA; and

(E) A copy of the information provided to the physician as required by paragraph (o) of this section.

(iii) The employer shall ensure that this record is maintained for the duration of employment plus thirty (30) years, in accordance with 29 CFR 1910.20.

(5) *Training records.* The employer shall maintain all employee training records for one (1) year beyond the last date of employment.

(6) *Availability.* (i) The employer, upon written request, shall make all records required to be maintained by this section available to the Assistant Secretary and the Director for examination and copying.

(ii) The employer, upon request, shall make any exposure records required by paragraphs (g) and (p) of this section available for examination and copying to affected employees, former employees, designated representatives, and the Assistant Secretary, in accordance with 29 CFR 1910.20 (a)–(e) and (g)–(i).

(iii) The employer, upon request, shall make employee medical records required by paragraphs (o) and (p) of this section available for examination and copying to the subject employee, anyone having the specific written consent of the subject employee, and the Assistant Secretary, in accordance with 29 CFR 1910.20.

(6) *Transfer of records.* (i) The employer shall comply with the requirements concerning transfer of records set forth in 29 CFR 1910.20 (h).

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director at least 90 days prior to disposal and, upon request, transmit them to the Director.

(q) *Observation of monitoring*—(1) *Employee observation.* The employer shall provide affected employees, or their designated representatives, an opportunity to observe the measuring or monitoring of employee exposure to MDA conducted pursuant to paragraph (g) of this section.

(2) *Observation procedures.* When observation of the measuring or monitoring of employee exposure to MDA requires entry into areas where the use of protective clothing and equipment or respirators is required, the employer shall provide the observer with personal protective clothing and equipment or respirators required to be worn by employees working in the area, assure the use of such clothing and equipment or respirators, and require the observer to comply with all other applicable safety and health procedures.

APPENDIX A TO § 1926.59—SUBSTANCE DATA SHEET, for 4-4'-Methylenedianiline

I. SUBSTANCE IDENTIFICATION

A. *Substance:* Methylenedianiline (MDA)

B. *Permissible Exposure:* 1. Airborne: Ten parts per billion parts of air (10 ppb), time-weighted average (TWA) for an 8-hour workday and an action level of five parts per billion parts of air (5 ppb).

2. Dermal: Eye contact and skin contact with MDA are not permitted.

C. *Appearance and odor:* White to tan solid; amine odor.

II. HEALTH HAZARD DATA

A. *Ways in which MDA affects your health.* MDA can affect your health if you inhale it, or if it comes in contact with your skin or eyes. MDA is also harmful if you happen to swallow it. Do not get MDA in eyes, on skin, or on clothing.

B. *Effects of overexposure.* 1. Short-term (acute) overexposure: Overexposure to MDA may produce fever, chills, loss of appetite, vomiting, jaundice. Contact may irritate skin, eyes and mucous membranes. Sensitization may occur.

2. Long-term (chronic) exposure. Repeated or prolonged exposure to MDA, even at relatively low concentrations, may cause cancer. In addition, damage to the liver, kidneys, blood, and spleen may occur with long term exposure.

3. Reporting signs and symptoms: You should inform your employer if you develop any signs or symptoms which you suspect are caused by exposure to MDA including yellow staining of the skin.

III. PROTECTIVE CLOTHING AND EQUIPMENT

A. *Respirators.* Respirators are required for those operations in which engineering controls or work practice controls are not adequate or feasible to reduce exposure to the permissible limit. If respirators are worn, they must have the joint Mine Safety and Health Administration and National Institute for Occupational Safety and Health (NIOSH) seal of approval, and cartridges or canisters must be replaced as necessary to maintain the effectiveness of the respirator. If you experience difficulty breathing while wearing a respirator, You may request a positive pressure respirator from your employer. You must be thoroughly trained to use the assigned respirator, and the training will be provided by your employer.

MDA does not have a detectable odor except at levels well above the permissible exposure limits. Do not depend on odor to warn you when a respirator canister is exhausted. If you can smell MDA while wearing a respirator, proceed immediately to fresh air. If you experience difficulty breathing while wearing a respirator, tell your employer.

B. *Protective clothing.* You may be required to wear coveralls, aprons, gloves, face shields, or other appropriate protective clothing to prevent skin contact with MDA. Where protective clothing is required, your employer is required to provide clean garments to you, as necessary, to assure that the clothing protects you adequately. Replace or repair impervious clothing that has developed leaks.

MDA should never be allowed to remain on the skin. Clothing and shoes which are not impervious to MDA should not be allowed to become contaminated with MDA, and if they do, the clothing and shoes should be promptly removed and decontaminated. The clothing should be laundered to remove MDA or discarded. Once MDA penetrates shoes or other leather articles, they should not be worn again.

C. *Eye protection.* You must wear splashproof safety goggles in areas where liquid MDA may contact your eyes. Contact lenses should not be worn in areas where eye contact with MDA can occur. In addition, you must wear a face shield if your face could be splashed with MDA liquid.

IV. EMERGENCY AND FIRST AID PROCEDURES

A. *Eye and face exposure.* If MDA is splashed into the eyes, wash the eyes for at least 15 minutes. See a doctor as soon as possible.

b. *Skin exposure.* If MDA is spilled on your clothing or skin, remove the contaminated clothing and wash the exposed skin with large amounts of soap and water immediately. Wash contaminated clothing before you wear it again.

C. *Breathing.* If you or any other person breathes in large amounts of MDA, get the exposed person to fresh air at once. Apply artificial respiration if breathing has stopped. Call for medical assistance or a doctor as soon as possible. Never enter any vessel or confined space where the MDA concentration might be high without proper safety equipment and at least one other person present who will stay outside. A life line should be used.

D. *Swallowing.* If MDA has been swallowed and the patient is conscious, do not induce vomiting. Call for medical assistance or a doctor immediately.

V. MEDICAL REQUIREMENTS

If you are exposed to MDA at a concentration at or above the action level for more than 30 days per year, or exposed to liquid mixtures more than 15 days per year, your employer is required to provide a medical examination, including a medical history and laboratory tests, within 60 days of the effective date of this standard and annually thereafter. These tests shall be provided without cost to you. In addition, if you are accidentally exposed to MDA (either by ingestion, inhalation, or skin/eye contact) under conditions known or suspected to constitute toxic exposure to MDA, your employer is required to make special examinations and tests available to you.

VI. OBSERVATION OF MONITORING

Your employer is required to perform measurements that are representative of your exposure to MDA and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you and your representative must also be provided with, and must wear, the protective clothing and equipment.

VII. ACCESS TO RECORDS

You or your representative are entitled to see the records of measurements of your exposure to MDA upon written request to your employer. Your medical examination records can be furnished to your physician or designated representative upon request by you to your employer.

VIII. PRECAUTIONS FOR SAFE USE, HANDLING AND STORAGE

A. *Material is combustible.* Avoid strong acids and their anhydrides. Avoid strong oxidants. Consult supervisor for disposal requirements.

B. *Emergency clean-up.* Wear self-contained breathing apparatus and fully clothe the body in the appropriate personal protective clothing and equipment.

APPENDIX B to § 1926.58—SUBSTANCE TECHNICAL GUIDELINES, MDA

I. IDENTIFICATION

A. Substance identification.

1. Synonyms: CAS No. 101-77-9. 4,4'-methylenedianiline; 4,4'-methylenebisaniline; methylenedianiline; dianilinomethane.

2. Formula: $C_{13}H_{14}N_2$.

II. PHYSICAL DATA

1. Appearance and Odor: White to tan solid; amine odor.

2. Molecular Weight: 198.26.

3. Boiling point: 398–399 degrees C at 760 mm Hg.

4. Melting point: 88–93 degrees C (190–100 degrees F).

5. Vapor pressure: 9 mmHg at 232 degrees C.

6. Evaporation Rate (n-butyl acetate = 1): Negligible.

7. Vapor Density (Air=1): Not Applicable.

8. Volatile Fraction by Weight: Negligible.

9. Specific Gravity (Water=1): Slight.

10. Heat of Combustion: −8.40 kcal/g.

11. Solubility in Water: Slightly soluble in cold water, very soluble in alcohol, benzene, ether, and many organic solvents.

III. FIRE, EXPLOSION, AND REACTIVITY HAZARD DATA

1. Flash point: 190 degrees C (374 degrees F) Setaflash closed cup.

2. Flash Point: 226 degrees C (439 degrees F) Cleveland open cup.

3. Extinguishing Media: Water spray; Dry Chemical; Carbon dioxide.

4. Special Fire Fighting Procedures:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5. Unusual Fire and Explosion Hazards:

Fire or excessive heat may cause production of hazardous decomposition products.

IV. REACTIVITY DATA

1. Stability: Stable.

2. Incompatibility: Strong oxidizers.

3. Hazardous Decomposition products: As with any other organic material, combustion may produce carbon monoxide. Oxides of nitrogen may also be present.

4. Hazardous Polymerization: Will not occur.

V. SPILL AND LEAK PROCEDURES

1. Sweep material onto paper and place in fiber carton.

2. Package appropriately for safe feed to an incinerator or dissolve in compatible waste solvents prior to incineration.

3. Dispose of in an approved incinerator equipped with afterburner and scrubber or contract with licensed chemical waste disposal service.

4. Discharge treatment or disposal may be subject to federal, state, or local laws.

5. Wear appropriate personal protective equipment.

VI. SPECIAL STORAGE AND HANDLING PRECAUTIONS

A. High exposure to MDA can occur when transferring the substance from one container to another. Such operations should be well ventilated and good work practices must be established to avoid spills.

B. Pure MDA is a solid with a low vapor pressure. Grinding or heating operations increase the potential for exposure.

C. Store away from oxidizing materials.

D. Employers shall advise employees of all areas and operations where exposure to MDA could occur.

VII. HOUSEKEEPING AND HYGIENE FACILITIES

A. The workplace should be kept clean, orderly, and in a sanitary condition.

The employer should institute a leak and spill detection program for operations involving MDA in order to detect sources of fugitive MDA emissions.

B. Adequate washing facilities with hot and cold water are to be provided and maintained in a sanitary condition. Suitable cleansing agents should also be provided to assure the effective removal of MDA from the skin.

VIII. COMMON OPERATIONS

Common operations in which exposure to MDA is likely to occur include the following: Manufacture of MDA; Manufacture of Methylene diisocyanate; Curing agent for epoxy resin structures; Wire coating operations; and filament winding.

Appendix C to § 1926.59—Medical Surveillance Guidelines for MDA

II. ROUTE OF ENTRY

Inhalation; skin absorption; ingestion. MDA can be inhaled, absorbed through the skin, or ingested.

II. TOXICOLOGY

MDA is a suspect carcinogen in humans. There are several reports of liver disease in humans and animals resulting from acute exposure to MDA. A well documented case of an acute cardiomyopathy secondary to exposure to MDA is on record. Numerous human cases of hepatitis secondary to MDA are known. Upon direct contact MDA may also cause damage to the eyes. Dermatitis and skin sensitization have been observed.

Almost all forms of acute environmental hepatic injury in humans involve the hepatic parenchyma and produce hepatocellular jaundice. This agent produces intrahepatic cholestasis. The clinical picture consists of cholestatic jaundice, preceded or accompanied by abdominal pain, fever, and chills. Onset in about 60% of all observed cases is abrupt with severe abdominal pain. In about 30% of observed cases, the illness presented and evolved more slowly and less dramatically, with only slight abdominal pain. In about 10% of the cases only jaundice was evident. The cholestatic nature of the jaundice is evident in the prominence of itching, the histologic predominence of bile stasis, and portal inflammatory infiltration, accompanied by only slight parenchymal injury in most cases, and by the moderately elevated transaminase values. Acute, high doses, however, have been known to cause hepatocellular damage resulting in elevated SGPT, SGOT, alkaline phosphatase and bilirubin.

Absorption through the skin is rapid. MDA is metabolized and excreted over a 48-hour period. Direct contact may be irritating to the skin, causing dermatitis. Also MDA which is deposited on the skin is not thoroughly removed through washing.

MDA may cause bladder cancer in humans. Animal data supporting this assumption is not available nor is conclusive human data. However, human data collected on workers at a helicopter manufacturing facility where MDA is used suggests a higher incidence of bladder cancer among exposed workers.

III. SIGNS AND SYMPTOMS

Skin may become yellow from contact with MDA.

Repeated or prolonged contact with MDA may result in recurring dermatitis (red-itchy, cracked skin) and eye irritation. Inhalation, ingestion or absorption through the skin at high concentrations may result in hepatitis, causing symptoms such as fever and chills, nausea and vomiting, dark urine, anorexia, rash, right upper quadrant pain and jaundice. Corneal burns may occur when MDA is splashed in the eyes.

IV. TREATMENT OF ACUTE TOXIC EFFECTS/EMERGENCY SITUATION

If MDA gets into the eyes, immediately wash eyes with large amounts of water. If MDA is splashed on the skin, immediately wash contaminated skin with mild soap or detergent. Employee should be removed from exposure and given proper medical treatment. Medical tests required under the emergency section of the medical surveillance section (0)(4) must be conducted.

If the chemical is swallowed do not induce vomiting but remove by gastric lavage.

Appendix D to 1926.59—Sampling and Analytical Methods for MDA Monitoring and Measurement Procedures

Measurements taken for the purpose of determining employee exposure to MDA are best taken so that the representative average 8-hour exposure may be determined from a single 8-hour sample or two (2) 4-hour samples. Short-time interval samples (or grab samples) may also be used to determine average exposure level if a minimum of five measurements are taken in a random manner over the 8-hour work shift. Random sampling means that any portion of the work shift has the same chance of being sampled as any other. The arithmetic average of all such random samples taken on one work shift is an estimate of an employee's average level of exposure for that work shift. Air samples should be taken in the employee's breathing zone (air that would most nearly represent that inhaled by the employee).

There are a number of methods available for monitoring employee exposures to MDA. The method OSHA currently uses is included below.

The employer however has the obligation of selecting any monitoring method which meets the accuracy and precision requirements of the standard under his unique field conditions. The standard requires that the method of monitoring must have an accuracy, to a 95 percent confidence level, of not less than plus or minus 25 percent for the select PEL.

OSHA Methodology

Sampling procedure

Apparatus

Samples are collected by use of a personal sampling pump that can be calibrated within ±5% of the recommended flow rate with the sampling filter in line.

Samples are collected on 37 mm Gelman type A/E glass fiber filters treated with sulfuric acid. The filters are prepared by soaking each filter with 0.5 mL of 0.26N H_2SO_4. (0.26 N H_2SO_4 can be prepared by diluting 1.5 mL of 36N H_2SO_4 to 200 mL with deionized water.) The filters are dried in an oven at 100 degrees C for one hour and then assembled into two-piece 37 mm polystyrene cassettes with backup pads. The cassettes are sealed with shrink bands and the ends are plugged with plastic plugs.

After sampling, the filters are carefully removed from the cassettes and individually transferred to small vials containing approximately 2 mL deionized water. The vials must be tightly sealed. The water can be added before or after the filters are transferred. The vials must be sealable and capable of holding at least 7 mL of liquid. Small glass scintillation vials with caps containing Teflon liners are recommended.

Reagents

Deionized water is needed for addition to the vials.

Sampling technique

Immediately before sampling, remove the plastic plugs from the filter cassettes.

Attach the cassette to the sampling pump with flexible tubing and place the cassette in the employee's breathing zone.

After sampling, seal the cassettes with plastic plugs until the filters are transferred to the vials containing deionized water.

At some convenient time within 10 hours of sampling, transfer the sample filters to vials.

Seal the small vials lengthwise.

Submit at least one blank filter with each sample set. Blanks should be handled in the same manner as samples, but no air is drawn through them.

Record sample volumes (in L of air) for each sample, along with any potential interferences.

Retention efficiency

A retention efficiency study was performed by drawing 100 L of air (80% relative humidity) at 1 L/min through sample filters that had been spiked with 0.814 ug MDA. Instead of using backup pads, blank acid-treated filters were used as backups in each cassette. Upon analysis, the top filters were found to have an average of 91.8% of the spiked amount. There was no MDA found on the bottom filters, so the amount lost was probably due to the slight instability of the MDA salt.

Extraction efficiency

The average extraction efficiency for six filters spiked at the target concentration is 99.6%.

The stability of extracted and derivatized samples was verified by reanalyzing the above six samples the next day using fresh standards. The average extraction efficiency for the reanalyzed samples is 98.7%.

Recommended air volume and sampling rate

The recommended air volume is 100 L.

The recommended sampling rate is 1 L/min.

Interferences (sampling)

MDI appears to be a positive interference. It was found that when MDI was spiked onto an acid-treated filter, the MDI converted to MDA after air was drawn through it.

Suspected interferences should be reported to the laboratory with submitted samples.

Safety precautions (sampling)

Attach the sampling equipment to the employees so that it will not interfere with work performance or safety.

Follow all safety procedures that apply to the work area being sampled.

Analytical Procedure

Apparatus: The following are required for analysis.

A GC equipped with an electron capture detector. For this evaluation a Tracor 222 Gas Chromatograph equipped with a Nickel 63 High Temperature Electron Capture Detector and a Linearizer was used.

A GC column capable of separating the MDA derivative from the solvent and interferences. A 6 ft X 2 mm ID glass column packed with 3% OV-101 coated on 100/120 Gas Chrom Q was used in this evaluation.

A electronic integrator or some other suitable means of measuring peak areas or heights.

Small resealable vials with Teflon-lined caps capable of holding 4 mL.

A dispenser or pipet for toluene capable of delivering 2.0 mL.

Pipets (or repipets with plastic or Teflon tips) capable of delivering 1 mL for the sodium hydroxide and buffer solutions.

A repipet capable of delivering 25 uL HFAA.

Syringes for preparation of standards and injection of standards and samples into a GC.

Volumetric flasks and pipets to dilute the pure MDA in preparation of standards.

Disposable pipets to transfer the toluene layers after the samples are extracted.

Reagents

0.5 NaOH prepared from reagent grade NaOH.

Toluene, pesticide grade. Burdick and Jackson distilled in glass toluene was used.

Heptafluorobutyric acid anhydride (HFAA). HFAA from Pierce Chemical Company was used.

pH 7.0 phosphate buffer, prepared from 136 g potassium dihydrogen phosphate and 1 L deionized water. The pH is adjusted to 7.0 with saturated sodium hydroxide solution.

4,4′-Methylenedianiline (MDA), reagent grade.

Standard Preparation

Concentrated stock standards are prepared by diluting pure MDA with toluene. Analytical standards are prepared by injecting uL amounts of diluted stock standards into vials that contain 2.0 mL toluene.

25 uL HFAA are added to each vial and the vials are capped and shaken for 10 seconds.

After 10 min. 1 mL of buffer is added to each vial.

The vials are recapped and shaken for 10 seconds.

After allowing the layers to separate, aliquots of the toluene (upper) layers are removed with a syringe and analyzed by GC.

Analytical standard concentrations should bracket sample concentrations. Thus, if samples fall out of the range of prepared standards, additional standards must be prepared to ascertain detector response.

Sample preparation

The sample filters are received in vials containing deionized water.

1 mL of 0.5N NaOH and 2.0 mL toluene are added to each vial.

The vials are recapped and shaken for 10 min.

After allowing the layers to separate, approximately 1 mL aliquots of the toluene (upper) layers are transferred to separate vials with clean disposable pipets.

The toluene layers are treated and analyzed.

Analysis

GC conditions:

Zone temperatures:	Column—220 degrees C.
	Injector—235 degrees C.
	Detector—335 degrees C.
Gas flows. Ar/CH_4. (95/5)	Column—28 mL/min.
	Purge—40 mL/min.

Injection volume:	5.0 uL.
Column:	6 ft × ⅛ in ID glass, 3% OV–101 on 100/120 Gas Chrom Q.
Retention time of MDA derivative:	3.5 min.

Chromatogram:

Peak areas or heights are measured by an integrator or other suitable means.

A calibration curve is constructed by plotting response (peak areas or heights) of standard injections versus ug of MDA per sample. Sample concentrations must be bracketed by standards.

Interferences (analytical)

Any compound that gives an electron capture detector response and has the same general retention time as the HFAA derivative of MDA is a potential interference. Suspected interferences reported to the laboratory with submitted samples by the industrial hygienist must be considered before samples are derivatized.

GC parameters may be changed to possibly circumvent interferences.

Retention time on a single column is not considered proof of chemical identity. Analyte identity should be confirmed by GC/MS if possible.

Calculations

The analyte concentration for samples is obtained from the calibration curve in terms of ug MDA per sample. The extraction efficiency is 100%. If any MDA is found on the blank, that amount is subtracted from the sample amounts. The air concentrations are calculated using the following formulae.

ug/m^3=(ug MDA per sample) (1000)/(L of air sampled).

ppb=(ug/m^3)(24.46)/(198.3)=(ug/m^3)(0.1233) where 24.46 is the molar volume at 25 degrees C and 760 mm Hg.

Safety Precautions (analytical)

Avoid skin contact and inhalation of all chemicals.

Restrict the use of all chemicals to a fume hood if possible.

Wear safety glasses and a lab coat at all times while in the lab area.

Appendix E to § 1926.59

Qualitative and Quantitative Fit Testing Procedures.

Qualitative Fit Test Protocols

I. Isoamyl Acetate (banana oil) Protocol.

A. Odor threshold screening

1. Three 1-liter glass jars with metal lids (e.g. Mason or Bell jars) are required.

2. Odor-free water (e.g. distilled or spring water) at approximately 25 °C shall be used for the solutions.

3. The isoamyl acetate (IAA) (also known as isopentyl acetate) stock solution is prepared by adding 1 cc of pure IAA to 800 cc of odor free water in a 1-liter jar and shaking for 30 seconds. This solution shall be prepared new at least weekly.

4. The screening test shall be conducted in a room separate from the room used for actual fit testing. The two rooms shall be well ventilated so that circulation of the test solution does not occur and cross contaminate the testing different sites.

5. The odor test solution is prepared in a second jar by placing 0.4 cc of the stock solution into 500 cc of odor free water using a clean dropper or pipette. Shake for 30 seconds and allow to stand for two to three minutes so that the IAA concentration above the liquid may reach equilibrium. This solution may be used for only one day.

6. A test blank is prepared in a third jar by adding 500 cc of odor free water.

7. The odor test and test blank jars shall be labelled 1 and 2 for jar identification.

8. The following instructions shall be typed on a card and placed on the table in front of the two test jars (i.e. 1 and 2):

"The purpose of this test is to determine if you can smell banana oil at a low concentration. The two bottles in front of you contain water. One of these bottles also contains a small amount of banana oil. Be sure the covers are on tight, then shake each bottle for two seconds. Unscrew the lid of each bottle, one at a time, and sniff at the mouth of the bottle. Indicate to the test conductor which bottle contains banana oil."

9. The mixtures used in the IAA odor detection test shall be prepared in an area separate from where the test is performed, in order to prevent olfactory fatigue in the subject.

10. If the test subject is unable to correctly identify the jar containing the odor test solution, the IAA qualitative fit test may not be used.

11. If the test subject correctly identifies the jar containing the odor test solution, the test subject may proceed to respirator selection and fit testing.

B. Respirator Selection

1. The test subject shall be allowed to pick the most comfortable respirator from a selection including respirators of various sizes from different manufacturers. The selection shall include at least three sizes of elastomeric half facepieces, from at least two manufacturers.

2. The selection process shall be conducted in a room separate from the fit-test chamber to prevent odor fatigue. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine a "comfortable" respirator. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, as it is only a review.

3. The test subject should understand that the employee is being asked to select the respirator which provides the most comfortable fit.

4. The test subject holds each facepiece up to the face and eliminates those which obviously do not give a comfortable fit. Normally, selection will begin with a half-mask and if a comfortable fit cannot be found, the subject will be asked to test the full facepiece respirators. (A small percentage of users will not be able to wear any half-mask.)

5. The more comfortable facepieces are noted; the most comfortable mask is donned and *worn at least five minutes* to assess comfort. All donning and adjustments of the facepiece shall be performed by the test subject without assistance from the test conductor or other person. Assistance in assessing comfort can be given by discussing the points in #6 below. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include reviewing the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator after donning:

- Positioning of mask on nose.
- Room for eye protection.
- Room to talk.
- Positioning mask on face and cheeks.

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

- Chin properly placed.
- Strap tension.
- Fit across nose bridge.
- Distance from nose to chin.
- Tendency to slip.
- Self-observation in mirror.

8. The test subject shall perform the conventional negative- or positive-pressure fit checks (e.g., see ANSI Z88.2–1980A7). Before beginning the negative- or positive-pressure test, the subject shall be told to "seat" the mask by rapidly moving the head from side-to-side and up and down, while taking a few deep breaths.

9. The test subject is now ready for fit testing.

10. After passing the fit test, the test subject shall be questioned again regarding the comfort of the respirator. If the respirator has become uncomfortable, another model of respirator shall be tried.

11. The employee shall be given the opportunity to select a different facepiece and to be retested if the chosen facepiece becomes increasingly uncomfortable at any time.

C. Fit test

1. The fit test chamber shall be similar to a clear 55 gallon drum liner suspended inverted over a 2-foot diameter frame, so that the top of the chamber is about 6 inches above the test subject's head. The inside top center of the chamber shall have a small hook attached.

2. Each respirator used for the fitting and fit testing shall be equipped with organic vapor cartridges or offer protection against organic vapors. The cartridges or canisters shall be replaced as necessary to maintain the effectiveness of the respirator.

3. After selecting, donning, and properly adjusting a respirator, the test subject shall wear it to the fit testing room. This room shall be separate from the room used for odor threshold screening and respirator selection, and shall be well ventilated, as by an exhaust fan or lab hood, to prevent general room contamination.

4. A copy of the following test exercises and Rainbow Passage shall be taped to the inside of the test chamber:

Test Exercises

i. Breathe normally.

ii. Breathe deeply. Be certain breaths are *deep* and *regular*.

iii. Turn head all the way from one side to the other. Inhale on each side. Be certain movement is complete. Do not bump the respirator against the shoulders.

iv. Nod head up-and-down. Inhale when head is in the full up position (looking toward ceiling). Be certain motions are complete and made about every second. Do not bump the respirator on the chest.

v. Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it aloud will result in a wide range of facial movements, and thus be useful to satisfy this requirement. Alternative passages which serve the same purpose may also be used.

vi. Jog in place.

vii. Breathe normally.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

5. Each test subject shall wear the respirator for at least 10 minutes before starting the fit test.

6. Upon entering the test chamber, the test subject shall be given a 6 inch by 5 inch piece of paper towel or other porous absorbent single ply material, folded in half and wetted with three-quarters of one cc of pure IAA. The test subject shall hang the wet towel on the hook at the top of the chamber.

7. Allow two minutes for the IAA test concentration to be reached before starting the fit-test exercises.

8. Each exercise described in #4 above shall be performed for at least one minute.

9. If at any time during the test, the subject detects the banana-like odor of IAA, the test has failed. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.

10. If the test is failed, the subject shall return to the selection room and remove the respirator, repeat the odor sensitivity test, select and put on another respirator, return to the test chamber, and again begin the procedure described in the c(4) through c(8) above. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait about 5 minutes before retesting. Odor sensitivity will usually have returned by this time.

11. If a person cannot pass the fit test described above wearing a half-mask respirator from the available selection, full facepiece models must be used.

12. When a respirator is found that passes the test, the subject must break the faceseal and take a breath before exiting the chamber. This is to assure that the reason the test subject is not smelling the IAA is the good fit of the respirator facepiece seal and not olfactory fatigue.

13. When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test. To keep the area from becoming contaminated, the used towels shall be kept in a self-sealing bag so there is no significant IAA concentration buildup in the test chamber during subsequent tests.

14. Persons who have successfully passed this fit test with a half-mask respirator may be assigned the use of the test respirator in atmospheres with up to 10 times the PEL. In atmospheres greater than 10 times, and less than 50 times the PEL (up to 50 ppm), the subject must pass the IAA test using a full face negative pressure respirator. (The concentration of the IAA inside the test chamber must be increased by five times for QLFT of the full facepiece.)

15. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

16. If hair growth or apparrel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as a powered air-purifying respirator, supplied air respirator, or self-contained breathing apparatus.

17. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respiratory diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

18. Qualitative fit testing shall be repeated at least every 12 months.

19. In addition, because the sealing of the respirator may be affected, qualitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e.; multiple extractions without prothesis, or acquiring dentures,

(4) Reconstructive or cosmetic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

D. Recordkeeping

A summary of all test results shall be maintained by the employer for 3 years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of the test conductor.

(4) Respirators selected (indicate manufacturer, model, size and approval number).

(5) Testing agent.

II. Saccharin Solution Aerosol Protocol.

A. Respirator Selection.

Respirators shall be selected as described in section IB (respirator selection) above, except that each respirator shall be equipped with a particulate filter.

B. Taste Threshold Screening.

1. An enclosure placed over the head and shoulders shall be used for threshold screening (to determine if the individual can taste saccharin) and for fit testing. The enclosure shall be approximately 12 inches in diameter by 14 inches tall with at least the front clear to allow free movement of the head when a respirator is worn.

2. The test enclosure shall have a three-quarter inch hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

3. The entire screening and testing procedure shall be explained to the test subject prior to conducting the screening test.

4. During the threshold screening test, the test subject shall don the test enclosure and breathe with open mouth with tongue extended.

5. Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the threshold check solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

6. The threshold check solution consists of 0.83 grams of sodium saccharin, USP in water. It can be prepared by putting l cc of the test solution (see C 7 below) in 100 cc of water.

7. To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then is released and allowed to fully expand.

8. Ten squeezes of the nebulizer bulb are repeated rapidly and then the test subject is asked whether the saccharin can be tasted.

9. If the first response is negative, ten more squeezes of the nebulizer bulb are repeated rapidly and the test subject is again asked whether the saccharin can be tasted.

10. If the second response is negative ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin can be tasted.

11. The test conductor will take note of the number of squeezes required to elicit a taste response.

12. If the saccharin is not tasted after 30 squeezes (Step 10), the saccharin fit test cannot be performed on the test subject.

13. If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

14. Correct use of the nebulizer means that approximately l cc of liquid is used at a time in the nebulizer body.

15. The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least every four hours.

C. Fit test.

1. The test subject may not eat, drink (except plain water), or chew gum for 15 minutes before the test.

2. The test subject shall don and adjust the respirator without assistance from any person.

3. The fit test uses the same enclosure described in IIB above.

4. Each test subject shall wear the respirator for a least 10 minutes before starting the fit test. (a) This would be an appropriate time to talk with the test subject; to explain the fit test, the importance of

cooperation and, the purpose for the head exercises; or to demonstrate some of the exercises. (b) The test subject shall perform the conventional negative or positive pressure fit tests (See Ansi Z88.2 1980 A7).

5. The test subject shall enter the enclosure while wearing the respirator selected in section IB above. This respirator shall be properly adjusted and equipped with a particulate filter.

6. A second DeVilbiss Model 40 Inhalation Medication Nebulizer is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

7. The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 cc of warm water.

8. As before, the test subject shall breathe with mouth open and tongue extended.

9. The nebulizer is inserted into the hole in the front of the enclosure and the fit test solution is sprayed into the enclosure using the same technique as for the taste threshold screening and the same number of squeezes required to elicit a taste response in the screening. (See B8 through B10 above).

10. After generation of the aerosol read the following instructions to the test subject. The test subject shall perform the exercises for one minute each.

i. Breathe normally.

ii. Breathe deeply. Be certain breaths are deep and regular.

iii. Turn head all the way from one side to the other. Be certain movement is complete. Inhale on each side. Do not bump the respirator against the shoulders.

iv. Nod head up-and-down. Be certain motions are complete. Inhale when head is in the full up position (when looking toward the ceiling). Do not bump the respirator on the chest.

v. Talk. Talk aloud and slowly. The following paragraph is called the Rainbow passage. Reading it will result in a wide range of facial movememts, and thus be useful to satisfy this requirement.

vi. Jog in place.

vii. Breathe normally.

Rainbow passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.

11. At the beginning of each exercise, the aerosol concentration shall be replenished using one-half the number of squeezes as initially described in C9.

12. The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected.

13. If the saccharin is detected the fit is deemed unsatisfactory and a different respirator shall be tried.

14. Successful completion of the test protocol shall allow the use of the half mask tested respirator in contaminated atmospheres up to 10 times the PEL of MDA. In other words this protocol may be used assign protection factors no higher than ten.

15. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

16. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as powered air purifying respirators, supplied air respirator, or self-contained breathing apparatus.

17. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respirator diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

18. Qualitative fit testing shall be repeated at least every 12 months.

19. In addition, because the sealing of the respirator may be affected, qualitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e., multiple extractions without prothesis, or acquiring dentures,

(4) Reconstructive or cosmestic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

D. Recordkeeping

A summary of all test results shall be maintained by the employer for 3 years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of test conductor.

(4) Respirators selected (indicate manufacturer, model, size and approval number).

(5) Testing agent.

III. Irritant Fume Protocol.

A. Respirator selection.

Respirators shall be selected as described in section IB above, except that each respirator shall be equipped with a combination of high-efficiency and acid-gas cartridges.

B. Fit test.

1. The test subject shall be allowed to smell a weak concentration of the irritant smoke to familiarize the subject with the characteristic odor.

2. The test subject shall properly don the respirator selected as above, and wear it for at least 10 minutes before starting the fit test.

3. The test conductor shall review this protocol with the test subject before testing.

4. The test subject shall perform the conventional positive pressure and negative pressure fit checks (see ANSI Z88.2 1980). Failure of either check shall be cause to select an alternate respirator.

5. Break both ends of a ventilation smoke tube containing stannic oxychloride, such as the MSA part #5645, or equivalent. Attach a short length of tubing to one end of the smoke tube. Attach the other end of the smoke tube to a low pressure air pump set to deliver 200 milliliters per minute.

6. Advise the test subject that the smoke can be irritating to the eyes and instruct the subject, to keep the eyes closed while the test is performed.

7. The test conductor shall direct the stream of irritant smoke from the tube towards the faceseal area of the test subject. The person conducting the test shall begin with the tube at least 12 inches from the facepiece and gradually move to within one inch, moving around the whole perimeter of the mask.

8. The test subject shall be instructed to do the following exercises while the respirator is being challenged by the smoke. Each exercise shall be performed for one minute.

i. Breathe normally.

ii. Breathe deeply. Be certain breaths are deep and regular.

iii. Turn head all the way from one side to the other. Be certain movement is complete. Inhale on each side. Do not bump the respirator against the shoulders.

iv. Nod head up-and-down. Be certain motions are complete and made every second. Inhale when head is in the full up position (looking toward ceiling). Do not bump the respirator against the chest.

v. Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements, and thus be useful to satisfy this requirement. Alternative passages which serve the same purpose may also be used.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.

vi. Jogging in place.

vii. Breathe normally.

9. The test subject shall indicate to the test conductor if the irritant smoke is detected. If smoke is detected, the test conductor shall stop the test. In this case, the tested respirator is rejected and another respirator shall be selected.

10. Each test subject passing the smoke test (i.e., without detecting the smoke) shall be given a sensitivity check of smoke from the same tube to determine if the test subject reacts to the smoke. Failure to evoke a response shall void the fit test.

11. Steps B4, B9, B10 of this fit test protocol shall be performed in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the test agents.

12. Respirators successfully tested by the protocol may be used in contaminated atmospheres up to ten times the PEL of MDA.

13. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

14. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as powered air-purifying respirators, supplied air respirator, or self-contained breathing apparatus.

15. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respirator diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

16. Qualitative fit testing shall be repeated at least every 12 months.

17. In addition, because the sealing of the respirator may be affected, qualitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e.; multiple extractions without prothesis, or acquiring dentures,

(4) Reconstructive or cosmetic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

D. Recordkeeping

A summary of all test results shall be maintained by the employer for 3 years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of test conductor.

(4) Respirators selected (indicate manufacturer, model, size and approval number).

(5) Testing agent.

Quantitative Fit Test procedures

1. General

a. The method applies to the negative-pressure nonpowered air-purifying respirators only.

b. The employer shall assign an individual (with help as needed) who shall assume the full responsibility for implementing the respirator quantitative fit test program.

2. Definition

a. "Quantitative Fit Test" means the measurement of the effectiveness of a respirator seal in excluding the ambient atmosphere. The test is performed by dividing the measured concentration of challenge agent in a test chamber by the measured concentration of the challenge agent inside the respirator facepiece when the normal air purifying element has been replaced by an essentially perfect purifying element.

b. "Challenge Agent" means the air contaminant introduced into a test chamber so that its concentration inside and outside the respirator may be compared.

c. "Test Subject" means the person wearing the respirator for quantitative fit testing.

d. "Normal Standing position" means standing erect and straight with arms down along the sides and looking straight ahead.

e. "Fit Factor" means the ratio of challenge agent concentration outside with respect to the inside of a respirator inlet covering (facepiece or enclosure).

3. Apparatus

a. *Instrumentation.* Corn oil, sodium chloride or other appropriate aerosol generation, dilution, and measurement systems shall be used for quantitative fit test.

b. *Test chamber.* The test chamber shall be large enough to permit all test subjects to freely perform all required exercises without distributing the challenge agent concentration or the measurement apparatus. The test chamber shall be equipped and constructed so that the challenge agent is effectively isolated from the ambient air yet uniform in concentration throughout the chamber.

c. When testing air-purifying respirators, the normal filter or cartridge element shall be replaced with a high-efficiency particular filter supplied by the same manufacturer.

d. The sampling instrument shall be selected so that a strip chart record may be made of the test showing the rise and fall of challenge agent concentration with each inspiration and expiration at fit factors of at least 2,000.

e. The combination of substitute air-purifying elements (if any), challenge agent, and challenge agent concentration in the test chamber shall be such that the test subject is not exposed in excess of PEL to the challenge agent at any time during the testing process.

f. The sampling port on the test specimen respirator shall be placed and constructed so that there is no detecable leak around the port, a free air flow is allowed into the sampling line at all times and so there is no interference with the fit or performance of the respirator.

g. The test chamber and test set-up shall permit the person administering the test to observe one test subject inside the chamber during the test.

h. The equipment generating the challenge atmosphere shall maintain the concentration of challenge agent constant within a 10 percent variation for the duration of the test.

i. The time lag (interval between an event and its being recorded on the strip chart) of the instrumentation may not exceed 2 seconds.

j. The tubing for the test chamber atmosphere and for the respirator sampling port shall be the same diameter, length and material. It shall be kept as short as possible. The smallest diameter tubing recommended by the manufacturer shall be used.

k. The exhaust flow from the test chamber shall pass through a high-efficiency filter before release to the room.

l. When sodium chloride aerosol is used, the relative humidity inside the test chamber shall not exceed 50 percent.

4. *Procedural Requirements*

a. The fitting of half-mask respirators should be started with those having multiple sizes and a variety of interchangeable cartridges and canisters such as the MSA Comfr II–M, Norton M, Survivair M A–O M or Scott-M. Use either of the tests outlined below to assure that the facepiece is properly adjusted.

(1) *Positive pressure test.* With the exhaust port(s) blocked the negative pressure of slight inhalation should remain constant for several seconds.

(2) *Negative pressure test.* With the intake port(s) blocked the negative pressure slight inhalation should remain constant for several seconds.

b. After a facepiece is adjusted, the test subject shall wear the facepiece for at least 5 minutes before conducting a qualitive test by using either of the methods described below and using the exercise regime described in 5. a., b., c., d. and e.

(1) *Isoamyl acetate test.* When using organic vapor cartridges, the test subject who can smell the odor should be unable to detect the odor of isoamyl acetate squirted into the air near the most vulnerable portions of the facepiece seal. In a location which is separated from the test area, the test subject shall be instructed to close her/his eyes during the test period. A combination cartridge or canister with organic vapor and high-efficiency filters shall be used when available for the particular mask being tested. The test subject shall be given an opportunity to smell the odor of iaoamyl acetate before the test is conducted.

(2) *Irritant fume test.* When using high-efficiency filters, the test subject should be unable to detect the odor of irritant fume (stannic chloride or titanium tetrachloride ventilation smoke tubes) squirted into the air near the most vulnerable portions of the facepiece seal. The test subject shall be instructed to close her/his eyes during the test period.

c. The test subject may enter the quantitative testing chamber only if she or he has obtained a satisfactory fit by as stated in 4.b. of this Appendix.

d. Before the subject enters the test chamber, a reasonably stable challenge agent concentration shall be measured in the test chamber.

e. Immediately after the subject enters the test chamber, the challenge agent concentration inside the respirator shall be measured to ensure that the peak penetration does not exceed 5 percent for a half-mask and 1 percent for a full facepiece.

f. A stable challenge agent concentration shall be obtained prior to the actual start of testing.

g. Respirator restraining straps may not be overtightened for testing. The straps shall be adjusted by the wearer to give a reasonably comfortable fit typical of normal use.

5. *Exercise Regime.* Prior to entering the test chamber, the test subject shall be given complete instructions as to her/his part in the test procedures. The test subject shall perform the following exercises, in the order given, for each independent test.

a. *Normal Breathing (NB).* In the normal standing position, without talking, the subject shall breathe normally for at least one minute.

b. *Deep Breathing (DB).* In the normal standing position the subject shall do deep breathing for at least one minute pausing so as not to hyperventilate.

c. *Turning head side to side (SS).* Standing in place, the subject shall slowly turn his head from side between the extreme positions to each side. The head shall be held at each extreme position for at least 5 seconds. Perform for at least five complete cycles.

d. *Moving head up and down (UD).* Standing in place, the subject shall slowly move his head up and down between the extreme position straight up and the extreme position straight down. The head shall be held at each extreme position for at least 5 seconds. Perform for at least five complete cycles.

e. *Reading (R).* The subject shall read out slowly and loud so as to be heard clearly by the test conductor or monitor. The test subject shall read the "rainbow passage" at the end of this section.

f. *Grimace (G).* The test subject shall grimace, smile, frown, and generally contort the face using the facial muscles. Continue for at least 15 seconds.

g. *Bend over and touch toes (B).* The test subject shall bend at the waist and touch toes and return to upright position. Repeat for at least one minute.

h. *Jogging in place (J).* The test subject shall perform jog in place for at least one minute.

i. *Normal Breathing (NB).* In the normal standing position, without talking, the subject shall breathe normally for at least one minute.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

6. *Termination of Tests.* The test shall be terminated whenever any single peak penetration exceeds 5 percent for half-masks and 1 percent for full facepieces. The test subject may be refitted and retested. If two of the three required tests are terminated, the fit shall be deemed inadequate. (See paragraph 4.h.).

7. *Calculation of Fit Factors.* a. The fit factor determined by the quantitative fit test equals the average concentration inside the respirator.

b. The average test chamber concentration is the arithmetic average of the test chamber concentration at the beginning and of the end of the test.

c. The average peak concentration of the challenge agent inside the respirator shall be the arithmetic average peak concentrations for each of the nine exercises of the test which are computed as the arithmetic average of the peak concentrations found for each breath during the exercise.

d. The average peak concentration for an exericse may be determined graphically if there is not a great variation in the peak concentrations during a single exercise.

8. *Interpretation of Test Results.* The fit factor measured by the quantitative fit testing shall be the lowest of the three protection factors resulting from three independent tests.

9. *Other Requirements.* a. The test subject shall not be permitted to wear a half-mask or full facepiece if the minimum fit factor of 250 or 1,250, respectively, cannot be obtained. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as powered air-purifying respirators, supplied air respirator, or self-contained breathing apparatus.

b. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

c. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician to determine whether the test subject can wear a respirator while performing her or his duties.

d. The test subject shall be given the opportunity to wear the assigned respirator for one week. If the respirator does not provide a satisfactory fit during actual use, the test subject may request another QNFT which shall be performed immediately.

e. A respirator fit factor card shall be issued to the subject with the following information:

(1) Name.

(2) Date of fit test.

(3) Protection factors obtained through each manufacturer, model and approval number of respirator tested.

(4) Name and signature of the person that conducted the test.

f. Filters used for qualitative or quantitative fit testing shall be replaced weekly, whenever increased breathing resistance is encountered, or when the test agent has altered the integrity of the filter media.

Organic vapor cartridges/canisters shall be replaced daily or sooner if there is any indication of breakthrough by the test agent.

10. *Retesting.* In addition, because the sealing of the respirator may be affected, quantitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e.; multiple extractions without prothesis, or acquiring dentures,

(4) Reconstructive or cosmetic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

11. *Recordkeeping.* a. A summary of all test results shall be maintained in for three years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of the test conductor.

(4) Fit factors obtained from every respirator tested (indicate manufacturer, model, size and approval number).

b. A copy of all test data including the strip chart and results shall be kept for at least five years.

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federal register

Thursday
July 16, 1987

Part III

Office of Management and Budget

Cumulative Report on Rescissions and Deferrals; Notice

OFFICE OF MANAGEMENT AND BUDGET

Cumulative Report on Rescissions and Deferrals

July 1, 1987.

This report is submitted in fulfillment of the requirements of section 1014(e) of the Impoundment Control Act of 1974 (Pub. L. 93–344). Section 1014(e) provides for a monthly report listing all budget authority for this fiscal year for which, as of the first day of the month, a special message has been transmitted to the Congress.

This report gives the status as of July 1, 1987, of 57 deferrals contained in the five special messages of FY 1987. These messages were transmitted to the Congress on September 26, and December 15, 1986, and January 5 and 28, and March 4, 1987.

Rescissions (Table A and Attachment A)

As of July 1, 1987, there were no rescission proposals pending before the Congress.

Deferrals (Table B and Attachment B)

As of July 1, 1987, $5,188.5 million in 1987 budget authority was being deferred from obligation and $1.9 million in 1987 outlays was being deferred from expenditure. Attachment B shows the history and status of each deferral reported during FY 1987.

Information From Special Messages

The special message containing information on the deferrals covered by this cumulative report is printed in the **Federal Register** listed below:

Vol. 51, FR p. 35976, Tuesday, October 7, 1986

Vol. 51, FR p. 47356, Wednesday, December 31, 1986

Vol. 52, FR p. 964, Friday, January 9, 1987

Vol. 52, FR p. 3552, Wednesday, February 4, 1987

Vol. 52, FR p. 8046, Friday, March 13, 1987

James C. Miller III,
Director.

TABLE A

STATUS OF 1987 RESCISSIONS

	Amount (In millions of dollars)
Rescissions proposed by the President	$5,835.8
Accepted by the Congress	0
Rejected by the Congress	5,835.8
Pending before the Congress	0

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TABLE B

STATUS OF 1987 DEFERRALS

	Amount (In millions of dollars)
Deferrals proposed by the President	11,457.6
Routine Executive releases through July 1, 1987 (OMB/Agency releases of $6,239.4 million and cumulative adjustments of $0.7 million)	-6,238.6
Overturned by the Congress	-28.6
Currently before the Congress	5,190.4 a/

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a/ This amount includes $1.9 million in outlays for a Department of the Treasury deferral (D87-21).

Attachments

BILLING CODE 3110-01-M

Attachment A - Status of Rescissions - Fiscal Year 1987

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Rescission Number	Amount Previously Considered by Congress	Amount Currently before Congress	Date of Message	Amount Rescinded	Amount Made Available	Date Made Available	Congressional Action
DEPARTMENT OF AGRICULTURE								
Agricultural Research Service								
Buildings and facilities..................	R87-1	28,000		1-5-87		28,000	3-16-87	
	R87-1A			1-28-87				
Agricultural Stabilization and Conservation Service								
Rural clean water program................	R87-2	6,000		1-5-87		6,000	3-16-87	
Agricultural conservation program.........	R87-3	164,356		1-5-87		164,356	3-16-87	
Water bank program......................	R87-4	8,166		1-5-87		8,166	3-16-87	
Emergency conservation program...........	R87-5	10,000		1-5-87		10,000	3-16-87	
Farmers Home Administration								
Rural water and waste disposal grants....	R87-6	79,500		1-5-87		79,500	3-16-87	
Rural community fire protection grants...	R87-7	2,300		1-5-87		2,300	3-16-87	
Rural housing for domestic farm labor....	R87-8	7,400		1-5-87		7,400	3-16-87	
Mutual and self-help housing.............	R87-9	8,000		1-5-87		8,000	3-16-87	
Very low income housing repair grants....	R87-10	9,400		1-5-87		9,400	3-16-87	
Compensation for construction defects....	R87-11	500		1-5-87		500	3-16-87	
Rural housing preservation grants........	R87-12	14,400		1-5-87		14,400	3-16-87	
Soil Conservation Service								
Watershed and flood prevention operations	R87-13	96,000		1-5-87		96,000	3-16-87	
Great Plains conservation program........	R87-14	8,000		1-5-87		8,000	3-16-87	
Resource conservation and development....	R87-15	5,000		1-5-87		5,000	3-16-87	
Forest Service								
Land acquisition.........................	R87-16	49,030		1-5-87		49,030	3-16-87	
DEPARTMENT OF COMMERCE								
Economic Development Administration								
Economic development assistance programs.	R87-17	169,718		1-5-87				
	R87-17A	-50		1-28-87		169,668	3-16-87	
International Trade Administration								
Operations and administration............	R87-18	11,400		1-5-87		11,400	3-16-87	
National Oceanic and Atmospheric Administration								
Operations, research, and facilities.....	R87-19	58,857		1-5-87		58,857	3-16-87	
National Telecommunications and Information Administration								
Public telecommunications facilities, planning and construction..............	R87-20	19,300		1-5-87		19,300	3-16-87	

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Rescission Number	Amount Previously Considered * by Congress	Amount Currently before Congress	Date of Message	Amount Rescinded	Amount Made Available	Date Made Available	Congressional Action
DEPARTMENT OF DEFENSE - MILITARY								
Procurement								
Procurement of weapons and tracked combat vehicles, Army	R87-21	15,000		1-5-87		15,000	3-16-87	
Other procurement, Navy	R87-22	116,000		1-5-87		116,000	3-16-87	
Military Construction								
Military construction, Air Force	R87-23	2,750		1-5-87		2,750	3-16-87	
DEPARTMENT OF DEFENSE - CIVIL								
Corps of Engineers - Civil								
Construction, general	R87-24	7,715		1-5-87		7,715	3-16-87	
DEPARTMENT OF EDUCATION								
Office of Elementary and Secondary Education								
Compensatory education for the disadvantaged	R87-25	7,500		1-5-87		7,500	3-16-87	
Impact aid	R87-26	17,500		1-5-87		17,500	3-16-87	
Special programs	R87-27	54,980		1-5-87		54,980	3-16-87	
Office of Bilingual Education and Minority Languages Affairs								
Bilingual education	R87-28	45,886		1-5-87		45,886	3-16-87	
Office of Special Education and Rehabilitative Services								
Education for the handicapped	R87-29	288,659		1-5-87		288,659	3-16-87	
Rehabilitation services and handicapped research	R87-30	127,455		1-5-87		127,455	3-16-87	
Office of Vocational and Adult Education								
Vocational and adult education	R87-31	432,319		1-5-87		432,319	3-16-87	
Office of Postsecondary Education								
Student financial assistance	R87-32	1,269,000		1-5-87		1,269,000	3-16-87	
Higher education	R87-33	203,050		1-5-87		203,050	3-16-87	
	R87-33A			1-28-87				
Office of Educational Research and Improvement								
Libraries	R87-34	34,500		1-5-87		34,500	3-16-87	

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Rescission Number	Amount Previously Considered by Congress	Amount Currently before Congress	Date of Message	Amount Rescinded	Amount Made Available	Date Made Available	Congressional Action
DEPARTMENT OF ENERGY								
Energy Programs								
Energy supply, research and development activities	R87-35	81,800		1-5-87		81,800	3-16-87	
Fossil energy research and development	R87-36	44,464		1-5-87		44,464	3-16-87	
Energy conservation	R87-37	87,433		1-5-87				
	R87-37A	-3500		1-28-87		83,933	3-16-87	
DEPARTMENT OF HEALTH AND HUMAN SERVICES								
Food and Drug Administration								
Buildings and facilities	R87-38	500		1-5-87		500	3-16-87	
Health Resources and Services Administration								
Health resources and services	R87-39	161,210		1-5-87		161,210	3-16-87	
	R87-39A			1-28-87				
Indian health facilities	R87-40	57,100		1-5-87		57,100	3-16-87	
	R87-40A			1-28-87				
National Institutes of Health								
National Library of Medicine	R87-41	5,405		1-5-87		5,405	3-16-87	
Office of the Assistant Secretary of Health								
Public health service management	R87-42	5,000		1-5-87		5,000	3-16-87	
Departmental Management								
Policy research	R87-43	2,200		1-5-87		2,200	3-16-87	
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT								
Housing Programs								
Annual contributions for assisted housing	R87-44	473,313		1-5-87		473,313	3-16-87	
Housing counseling assistance	R87-45	3,500		1-5-87		3,500	3-16-87	
Community Planning and Development								
Community development grants	R87-46	375,200		1-5-87		375,200	3-16-87	
Urban development action grants	R87-47	237,500		1-5-87		237,500	3-16-87	
Management and Administration								
Salaries and expenses	R87-48	19,042		1-5-87		19,042	3-16-87	

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Rescission Number	Amount Previously Considered by Congress	Amount Currently before Congress	Date of Message	Amount Rescinded	Amount Made Available	Date Made Available	Congressional Action
DEPARTMENT OF THE INTERIOR								
Bureau of Land Management								
Management of lands and resources	R87-49	6,500		1-5-87		6,500	3-16-87	
Construction and access	R87-50	1,600		1-5-87		1,600	3-16-87	
Land acquisition	R87-51	2,700		1-5-87		2,700	3-16-87	
Bureau of Mines								
Mines and minerals	R87-52	16,594		1-5-87		16,594	3-16-87	
United States Fish and Wildlife Service								
Resource management	R87-53	20,500		1-5-87		20,500	3-16-87	
	R87-53A			1-28-87				
Construction	R87-54	23,200		1-5-87		23,200	3-16-87	
Land acquisition	R87-55	26,762		1-5-87		26,762	3-16-87	
National Park Service								
Operation of the national park system	R87-56	7,950		1-5-87		7,950	3-16-87	
Construction	R87-57	58,981		1-5-87		58,981	3-16-87	
Land acquisition	R87-58	97,638		1-5-87		97,638	3-16-87	
Historic preservation fund	R87-59	15,000		1-5-87		15,000	3-16-87	
Bureau of Indian Affairs								
Construction	R87-60	22,811		1-5-87		22,811	3-16-87	
Territorial and International Affairs								
Administration of territories	R87-61	2,500		1-5-87		2,500	3-16-87	
DEPARTMENT OF JUSTICE								
Immigration and Naturalization Service								
Salaries and expenses	R87-62	24,598		1-5-87		24,598	3-16-87	
DEPARTMENT OF LABOR								
Employment and Training Administration								
Training and employment services	R87-63	332,000		1-5-87		332,000	3-16-87	

As of July 1, 1987
Amounts in Thousands of Dollars

Agency/Bureau/Account	Rescission Number	Amount Previously Considered by Congress	Amount Currently before Congress	Date of Message	Amount Rescinded	Amount Made Available	Date Made Available	Congressional Action
DEPARTMENT OF THE TREASURY								
Federal Law Enforcement Training Center								
Salaries and expenses....................	R87-64	8,450		1-5-87		8,450	3-16-87	
Bureau of Alcohol, Tobacco, and Firearms								
Salaries and expenses....................	R87-65	15,000		1-5-87		15,000	3-16-87	
United States Customs Service								
Salaries and expenses....................	R87-66	38,945		1-5-87		38,945	3-16-87	
ENVIRONMENTAL PROTECTION AGENCY								
Abatement, control, and compliance.......	R87-67	47,500		1-5-87		47,500	3-16-87	
Buildings and facilities.................	R87-68	2,500		1-5-87		2,500	3-16-87	
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION								
Research and development.................	R87-69	25,796		1-5-87		25,796	3-16-87	
VETERANS ADMINISTRATION								
Medical care.............................	R87-70	75,000		1-5-87		(See Note Below)		
OTHER INDEPENDENT AGENCIES								
Appalachian Regional Commission								
Appalachian regional development programs	R87-71	31,059		1-5-87		31,059	3-16-87	
National Endowment for the Humanities								
National capital arts and cultural affairs	R87-72	4,000		1-5-87		4,000	3-16-87	
Selective Service System								
Salaries and expenses....................	R87-73	409		1-5-87		409	3-17-87	
Total, rescissions.......................		5,835,751	0			5,760,751		

NOTE. - The $75 million proposed for rescission in Rescission Proposal No. R87-70 was never withheld from obligation. Therefore, there was no need to release the funds on March 16.

Attachment B - Status of Deferrals - Fiscal Year 1987

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Deferral Number	Amount Transmitted Original Request	Amount Transmitted Subsequent Change	Date of Message	Cumulative OMB/Agency Releases	Congressionally Required Releases	Congressional Action	Cumulative Adjustments	Amount Deferred as of 7-1-87
FUNDS APPROPRIATED TO THE PRESIDENT									
International Security Assistance									
Foreign military sales credit	D87-22	4,040,441		12-15-86	2,155,000				1,885,441
Economic support fund	D87-1	95,000		9-26-86					
	D87-1A		2,351,470	12-15-86	1,901,210				545,260
Military assistance	D87-23	847,000		12-15-86	460,641				386,359
International military education and training	D87-24	2,000		12-15-86	2,000				0
Agency for International Development									
Functional development assistance	D87-32	2,278		1-28-87					2,278
International disaster assistance	D87-25	57,000		12-15-86	52,566				4,434
Special Assistance for Central America									
Assistance for the Nicaraguan Democratic Resistance	D87-26	60,000		12-15-86	60,000				0
Promotion of stability and security in Central America	D87-27	1,000		12-15-86					1,000
DEPARTMENT OF AGRICULTURE									
Commodity Credit Corporation									
Temporary emergency food assistance	D87-33	28,559		1-28-87		28,559	P.L. 100-6		0
Rural Electrification Administration									
Reimbursement to the Rural electrification and telephone and revolving fund for interest subsidies and losses	D87-34	20,000		1-28-87					20,000
Forest Service									
State and private forestry	D87-35	797		1-28-87					797
Land acquisition	D87-36	27,070		1-28-87					27,070
Expenses, brush disposal	D87-2	111,202		9-26-86					
	D87-2A		1,534	3-4-87					112,736
Timber roads, purchaser election	D87-37	11,900		1-28-87					11,900
Timber salvage sales	D87-3	29,731		9-26-86	6,113			3	23,621
Cooperative work	D87-4	526,938		9-26-86					
	D87-4A		8,336	3-4-87					535,275
Gifts, donations, and bequests for forest and rangeland research	D87-5	200		9-26-86	25				175

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Deferral Number	Amount Transmitted Original Request	Amount Transmitted Subsequent Change	Date of Message	Cumulative OMB/Agency Releases	Congressionally Required Releases	Congressional Action	Cumulative Adjustments	Amount Deferred as of 7-1-87
DEPARTMENT OF DEFENSE - MILITARY									
Military Construction									
Military construction, Defense............	D87-6	2,350		9-26-86					
	D87-6A		1,316,152	12-15-86	1,281,553				36,949
Family Housing									
Family housing, Defense....................	D87-7	76,943		9-26-86					
	D87-7A		190,022	12-15-86	210,650				56,315
DEPARTMENT OF DEFENSE - CIVIL									
Soldiers' and Airmen's Home									
Capital outlays...........................	D87-38	1,132		1-28-87					1,132
Wildlife Conservation, Military Reservations									
Wildlife conservation......................	D87-8	1,065		9-26-86					
	D87-8A		25	1-5-87					
	D87-8B		46	3-4-87	90				1,046
DEPARTMENT OF ENERGY									
Power Marketing Administration									
Alaska Power Administration, Operation and maintenance............................	D87-9	165		9-26-86					165
Southwestern Power Administration, Operation and maintenance................	D87-10	7,554		9-26-86					
	D87-10A		6,106	1-5-87					13,660
Western Area Power Administration, Construction, rehabilitation, operation and maintenance.........................	D87-29	4,485		1-5-87					4,485
Departmental Administration									
Departmental administration...............	D87-30	24,182		1-5-87					24,182

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Deferral Number	Amount Transmitted Original Request	Amount Transmitted Subsequent Change	Date of Message	Cumulative OMB/Agency Releases	Congressionally Required Releases	Congressional Action	Cumulative Adjustments	Amount Deferred as of 7-1-87
DEPARTMENT OF HEALTH AND HUMAN SERVICES									
Health Resources and Services Administration									
Indian catastrophic health emergency fund..	D87-28	10,000		12-15-86	10,000				0
Centers for Disease Control									
Disease control, research, and training....	D87-39	2,428		1-28-87					2,428
Alcohol, Drug Abuse, and Mental Health Administration									
Alcohol, drug abuse, and mental health...	D87-40	10,000		1-28-87					10,000
Office of Assistant Secretary for Health									
Scientific activities overseas (special foreign currency program).......	D87-11	2,900		9-26-86					2,900
Social Security Administration									
Limitation on administrative expenses (construction)..........................	D87-12	7,073		9-26-86					
	D87-12A		89	1-28-87	12				7,151
Limitation on administrative expenses (information technology systems)..........	D87-57	134,437		3-4-87					134,437
DEPARTMENT OF THE INTERIOR									
Bureau of Land Management									
Payments for proceeds, sale of Mineral Leasing Act of 1920, Section 40(d)........	D87-31	49		1-5-87					49
DEPARTMENT OF JUSTICE									
Office of Justice Programs									
Crime victims fund........................	D87-13	70,000		9-26-86					70,000
DEPARTMENT OF LABOR									
Employment Standards Administration									
Salaries and expenses.....................	D87-41	9,659		1-28-87					9,659

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Deferral Number	Amount Transmitted Original Request	Amount Transmitted Subsequent Change	Date of Message	Cumulative OMB/Agency Releases	Congres-sionally Required Releases	Congres-sional Action	Cumulative Adjustments	Amount Deferred as of 7-1-87
DEPARTMENT OF STATE									
Bureau for Refugee Programs									
United States emergency refugee and migration assistance fund, executive......	D87-14	6,100		9-26-86					
	D87-14A		14,000	1-5-87					20,100
Other									
Assistance for implementation of a Contadora agreement......................	D87-15	2,000		9-26-86	2,000				0
DEPARTMENT OF TRANSPORTATION									
Federal Railroad Administration									
Rail service assistance....................	D87-42	462		1-28-87					462
Railroad safety............................	D87-43	1,101		1-28-87	1,101				0
Conrail labor protection...................	D87-44	646		1-28-87					646
Northeast corridor improvement program.....	D87-45	16,962		1-28-87					16,962
Conrail commuter transition assistance.....	D87-46	10,000		1-28-87					10,000
Urban Mass Transportation Administration									
Research, training and human resources.....	D87-47	4,336		1-28-87					4,336
Interstate transfer grants - transit.......	D87-48	51,800		1-28-87					51,800
Federal Aviation Administration									
Operation and maintenance, Metropolitan Washington Airports......................	D87-49	12,214		1-28-87					12,214
Facilities and equipment (Airport and airway trust fund)......................	D87-16	803,877		9-26-86					
	D87-16A		295,611	12-15-86	19,996				1,079,492
Coast Guard									
Research, development, test, and evaluation..............................	D87-50	5,000		1-28-87					5,000
Offshore oil pollution compensation fund...	D87-51	2,154		1-28-87					2,154
Deepwater port liability fund..............	D87-52	5,176		1-28-87					5,176
Office of the Secretary									
Payments to air carriers...................	D87-53	10,748		1-28-87					10,748

As of July 1, 1987 Amounts in Thousands of Dollars Agency/Bureau/Account	Deferral Number	Amount Transmitted Original Request	Amount Transmitted Subsequent Change	Date of Message	Cumulative OMB/Agency Releases	Congres-sionally Required Releases	Congres-sional Action	Cumulative Adjustments	Amount Deferred as of 7-1-87
DEPARTMENT OF THE TREASURY									
Office of Revenue Sharing									
Local government fiscal assistance trust fund....................................	D87-17	74,149		9-26-86	71,208			5	2,946
Local government fiscal assistance trust fund....................................	D87-21	5,981		9-26-86	4,780			723	1,924
ENVIRONMENTAL PROTECTION AGENCY									
Research and development....................	D87-54	11,000		1-28-87					11,000
Abatement, control, and compliance.........	D87-55	11,400		1-28-87					11,400
OTHER INDEPENDENT AGENCIES									
Commission on the Ukraine Famine Salaries and expenses......................	D87-18	100		9-26-86					100
Office of the Federal Inspector for the Alaska Natural Gas Transportation System, Salaries and expenses....................	D87-19	411		9-26-86	411				0
Pennsylvania Avenue Development Corporation Land acquisition and development fund......	D87-20	11,873		9-26-86					11,873
United States Railway Association Administrative expenses....................	D87-56	1,155		1-28-87					1,155
TOTAL, DEFERRALS............................		7,274,185	4,183,392		6,239,356	28,559		731	5,190,393

Note: All of the above amounts represent budget authority except the Local Government Fiscal Assistance Trust Fund (D87-21) of outlays only.

[FR Doc. 87-16131 Filed 7-15-87; 8:45 am]

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federal register

Thursday
July 16, 1987

Part IV

Department of Education

Office of Elementary and Secondary Education

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34 CFR Part 230

Drug-Free Schools and Communities; Hawaiian Natives Program; Final Regulations

DEPARTMENT OF EDUCATION

Office of Elementary and Secondary Education

34 CFR Part 230

Drug-Free Schools and Communities; Hawaiian Natives Program

AGENCY: Department of Education.

ACTION: Final regulations.

SUMMARY: The Secretary issues final regulations governing the Drug-Free Schools and Communities—Hawaiian Natives Program. This program is authorized by section 4134 of the recently enacted Drug-Free Schools and Communities Act of 1986. Under this program, the Department provides financial assistance to organizations primarily serving and representing Hawaiian Natives to plan, conduct, and administer activities authorized by the Act.

EFFECTIVE DATE: These regulations take effect either 45 days after publication in the **Federal Register** or later if the Congress takes certain adjournments. If you want to know the effective date of these regulations, call or write the Department of Education contact person.

FOR FURTHER INFORMATION CONTACT: Mr. Allen King, OESE Drug-Free Schools Task Force, U.S. Department of Education, 400 Maryland Avenue, SW., Mail Stop: 6277, Washington, DC 20202. Telephone: (202) 732-4599.

SUPPLEMENTARY INFORMATION:

Background

The Drug-Free Schools and Communities Act ("the Act"), which was signed by the President on October 27, 1986, authorizes a variety of alcohol and drug abuse prevention programs for fiscal years 1987, 1988, and 1989.

Section 4112(a)(3) of the Act provides that from the total amount appropriated for programs under the Act for any fiscal year, 0.2 percent must be reserved for programs for Hawaiian Natives under section 4134. From the sums reserved, the Secretary makes awards to organizations primarily serving and representing Hawaiian Natives to plan, conduct, and administer programs, or portions thereof, that are authorized by and consistent with the provisions of the Act for the benefit of Hawaiian Natives. The organizations must be recognized by the Governor of the State of Hawaii (section 4134(a)).

On April 21, 1987, the Secretary published a notice of proposed rulemaking for this program in the **Federal Register** (52 FR 13212). A summary of the major provisions was included in the NPRM. In response to a comment, these final regulations do not include provisions in §§ 230.21(c)(3) and 230.30(b) of the NPRM, which addressed "balance" in providing services among Hawaiian Natives.

Also, as indicated in the NPRM, the Hawaiian Natives Program is subject to applicable law protecting students' rights in research, experimental programs, and testing. See section 439 of the General Education Provisions Act (20 U.S.C. 1232h) and its implementing regulations in 34 CFR Part 98.

Comments and Responses

Comments: The commenter noted that the proposed regulations included selection criteria focused on both (1) achieving "balance in providing services among Hawaiian Natives," and (2) selecting "participants, who are otherwise eligible to participate, for activities without regard to race, color, sex, age, or handicapping condition * * * ." See § 230.21(c)(3) and (d)(4) of the proposed regulations. The commenter stated that the latter provision suggests that services should be available to all ethnic and racial groups. The commenter also recommended that the first provision be changed to clarify that services need not be limited to Hawaiian Natives; in the commenter's view, it may be appropriate to serve persons who are not Hawaiian Natives in order to meet the needs of Hawaiian Natives themselves. The commenter further recommended that the regulations be changed to require applicants to identify how the inclusion of other persons in their program design would impact on Hawaiian Natives.

Response: A change has been made in order to avoid confusion regarding the population that may receive services under this program. These final regulations do not include provisions stated in § 230.21(c)(3) and § 230.30(b) of the NPRM, which addressed "balance" in providing services among Hawaiian Natives. The Secretary also wished to clarify the population that may be served. Section 4134 of the Act authorizes programs "for the benefit of Hawaiian Natives," who are defined as "individual[s] any of whose ancestors were natives, prior to 1778, of the area which now comprises the State of Hawaii." The Secretary does not believe that this statutory language authorizes the direct provision of services to individuals who are not Hawaiian Natives. Nevertheless, non-Hawaiian Natives could receive an incidental benefit from this program when it is a necessary consequence of providing services directly to Hawaiian Natives.

Section 4134 clearly directs services to a class of individuals who are defined on the basis of a common national origin. This class, however, is not defined on the basis of color or race. The class also would include males and females, handicapped persons, and persons of different ages. These final regulations are intended to foster nondiscrimination "without regard to race, color, sex, age, or handicapping condition" among the eligible population, namely Hawaiian Natives. Note that this list does not include "national origin"—specifically because this program directly serves Hawaiian Natives. Compare § 230.21(e) of the final regulations, which requires an applicant to indicate how it will ensure that "its personnel are selected for employment without regard to race, color, sex, *national origin,* age, or handicapping condition." (emphasis added).

Executive Order 12291

These regulations have been reviewed in accordance with Executive Order 12291. They are not classified as major because they do not meet the criteria for major regulations established in the order.

Paperwork Reduction Act of 1980

These regulations do not contain any information collection requirements covered by the Paperwork Reduction Act of 1980.

Assessment of Educational Impact

In the notice of proposed rulemaking, the Secretary requested comments on whether the proposed regulations would require transmission of information that is being gathered by or is available from any other agency or authority of the United States.

Based on the response to the proposed rules and on its own review, the Department has determined that the regulations in this document do not require transmission of information that is being gathered by or is available from any other agency or authority of the United States.

List of Subjects in 34 CFR Part 230

Drug abuse, Education, Elementary and secondary education, Grant programs—education.

(Catalog of Federal Domestic Assistance Number 84.199, Drug-Free Schools and Communities—Hawaiian Natives Program)

Dated: July 6, 1987.

William J. Bennett,

Secretary of Education.

The Secretary amends Title 34 of the Code of Federal Regulations by adding a new Part 230 to Chapter II to read as follows:

PART 230—DRUG-FREE SCHOOLS AND COMMUNITIES—HAWAIIAN NATIVES PROGRAM

Subpart A—General

Sec.
230.1 What is the Drug-Free Schools and Communities—Hawaiian Natives Program?
230.2 Who is eligible to apply for an award?
230.3 What activities may the Secretary fund?
230.4 What regulations apply?
230.5 What definitions apply?

Subpart B—[Reserved]

Subpart C—How Does the Secretary make an Award?

230.20 How does the Secretary evaluate an application?
230.21 What selection criteria does the Secretary use?

Subpart D—What Conditions Must Be Met After an Award?

230.30 What conditions must a grantee meet in coordinating services?

Authority: 20 U.S.C. 4644, unless otherwise noted.

Subpart A—General

§ 230.1 What is the Drug-Free Schools and Communities—Hawaiian Natives Program?

The Drug Free Schools and Communities—Hawaiian Natives Program provides financial assistance to organizations primarily serving and representing Hawaiian Natives to plan, conduct, and administer programs for Hawaiian natives that are authorized by and consistent with the Drug-Free Schools and Communities Act of 1986 (the "Act").

(Authority: 20 U.S.C. 4644)

§ 230.2 Who is eligible to apply for an award?

Any organization primarily serving and representing Hawaiian natives, that is recognized by the Governor of Hawaii, may apply for a grant or cooperative agreement under this program.

(Authority: 20 U.S.C. 4644)

§ 230.3 What activities may the Secretary fund?

The Secretary provides assistance to plan, conduct, and administer activities that are authorized by and consistent with the Act for the benefit of Hawaiian Natives. These activities may include, but are not limited to, the following:

(a) Local broadly-based programs for drug and alcohol abuse prevention, early intervention, rehabilitation referral, and education for all age groups.

(b) Training programs concerning drug abuse education and prevention for teachers, counselors, other educational personnel, parents, local law enforcement officials, judicial officials, other public service personnel, and community leaders.

(c) The development and distribution of educational and informational materials to provide public information (through the media and otherwise) for the purpose of achieving a drug-free society.

(d) Technical assistance to help community-based organizations and local and intermediate educational agencies and consortia in the planning and implementation of drug abuse prevention, early intervention, rehabilitation referral, and education programs.

(e) Activities to encourage the coordination of drug abuse education and prevention programs with related community efforts and resources.

(Authority: 20 U.S.C. 4132(a)(1–5), 4644)

§ 230.4 What regulations apply?

The following regulations apply to the Drug-Free Schools and Communities—Hawaiian Natives Program:

(a) The Education Department General Administrative Regulations (EDGAR) in 34 CFR Part 74 (Administration of Grants), Part 75 (Direct Grant Programs), Part 77 (Definitions That Apply to Department Programs), and Part 78 (Education Appeal Board).

(b) The regulations in this Part 230.

(Authority: 20 U.S.C. 4644)

§ 230.5 What definitions apply?

(a) *Definitions in the Act.* The following terms used in this part are defined in the Act: Hawaiian Native (Section 4134(b)) Drug abuse education and prevention

(Section 4141(b)(1))

(b) *Definitions in EDGAR.* The following terms used in this part are defined in 34 CFR 77.1:

Applicant
Application
Department
EDGAR
Grant
Secretary

(c) *Other definitions.* The following definition also applies to this part:

"Act" means the Drug-Free Schools and Communities Act of 1986.

(Authority: 20 U.S.C. 4644)

Subpart B—[Reserved]

Subpart C—How Does the Secretary Make an Award?

§ 230.20 How does the Secretary evaluate an application?

(a) The Secretary evaluates an application for a grant or cooperative agreement on the basis of the criteria in § 230.21.

(b) The Secretary awards up to 100 points for these criteria.

(c) The maximum possible score for each criterion is indicated in parentheses.

(Authority: 20 U.S.C. 4644)

§ 230.21 What selection criteria does the Secretary use?

The Secretary uses the following selection criteria in evaluating each application:

(a) *Understanding of problems and needs.* (15 points) The Secretary reviews each application to determine how adequately the applicant has identified problems and needs related to alcohol and drug abuse among Hawaiian Natives.

(b) *Plan to address problems and needs.* (30 points) The Secretary reviews each application to determine the quality of the proposed plan to address the identified problems and needs.

(c) *Coordination with other activities.* (15 points) The Secretary reviews each application to determine—

(1) The degree to which the applicant has coordinated with State and other organizations administering alcohol and drug abuse programs in developing the application; and

(2) The adequacy of the applicant's plans for coordination with State and national alcohol and drug abuse prevention activities.

(d) *Management plan.* (15 points) The Secretary reviews each application to determine the quality of the plan of operation for the applicant's program, including—

(1) The extent to which the plan is effective and ensures proper and efficient administration of the program;

(2) The manner in which the plan provides for the applicant's use of resources and personnel to achieve its objectives;

(3) The adequacy of the resources the applicant plans to use—including facilities, equipment, and supplies;

(4) How the plan will ensure that the program will select participants, who

are otherwise eligible to participate, for activities without regard to race, color, sex, age, or handicapping condition; and

(5) The schedules of work and completion dates for activities identified in the plan.

(e) *Quality of key personnel.* (20 points) (1) The Secretary reviews each application to determine the quality of key personnel proposed for the program, including—

(i) The qualifications of the program director;

(ii) The qualifications of each of the other key personnel;

(iii) The time that each person referred to in paragraphs (e)(1) (i) and (ii) of this section will commit to the program; and

(iv) How the applicant, as part of its nondiscriminatory employment practices, will ensure that its personnel are selected for employment without regard to race, color, sex, national origin, age, or handicapping condition.

(2) To determine personnel qualifications under paragraphs (e)(1) (i) and (ii) of this section, the Secretary considers—

(i) Experience and training in alcohol and drug abuse education and prevention; and

(ii) Any other qualifications that pertain to the quality of the program and services, including the capacity for training, evaluation, and dissemination.

(f) *Evaluation plan.* (5 points) The Secretary reviews each application to determine the quality of the applicant's plan to evaluate the effectiveness of the proposed program, including the extent to which the methods of evaluation are appropriate, are objective, and produce data that are quantifiable.

(Authority: 20 U.S.C. 4644)

Subpart D—What Conditions Must Be Met After an Award?

§ 230.20 What conditions must a grantee meet in coordinating services?

In carrying out its responsibilities under this program, each grantee shall—

(a) Coordinate its activities and services with local, State, and national efforts to combat alcohol and drug abuse; and

(b) Ensure that any materials produced or distributed with funds awarded to the applicant under the Act reflect the message that illicit drug use is wrong and harmful.

(Authority: 20 U.S.C. 4644)

[FR Doc. 87-16119 Filed 7-15-87; 8:45 am]

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federal register

Thursday
July 16, 1987

Part V

Department of Education

Office of Elementary and Secondary Education

34 CFR Part 235

Drug-Free Schools and Communities; Regional Centers Programs; Final Regulations

DEPARTMENT OF EDUCATION

34 CFR Part 235

Drug-Free Schools and Communities; Regional Centers Program

AGENCY: Department of Education.

ACTION: Final regulations.

SUMMARY: The Secretary issues final regulations governing the Drug-Free Schools and Communities—Regional Centers Program. This program is authorized by the recently enacted Drug-Free Schools and Communities Act of 1986. Under this program, the Department will establish and maintain five regional centers to provide training and assistance to State educational agencies (SEAs), local educational agencies (LEAs), and institutions of higher education (IHEs) in the implementation of effective alcohol and drug abuse education and prevention programs.

EFFECTIVE DATE: With one exception, these regulations take effect either 45 days after publication in the **Federal Register** or later if the Congress takes certain adjournments. The exception is that 34 CFR Part 79, as referenced in § 235.9(a) of the regulations, does not become applicable to this program until January 1, 1988. If you want to know the effective date of these regulations, call or write the Department of Education contact person.

FOR FURTHER INFORMATION CONTACT: Mr. Allen King, OESE Drug-Free Schools Task Force, U.S. Department of Education, 400 Maryland Avenue, SW., Mail Stop: 6277, Washington, DC 20202. Telephone: (202) 732–4599.

SUPPLEMENTARY INFORMATION:

Background

In enacting the Drug-Free Schools and Communities Act of 1986 ("Act"), the Congress recognized that drug and alcohol abuse education and prevention programs are essential components of a comprehensive strategy to reduce the demand for and use of drugs throughout the Nation. To support that effort, funds are provided under the Act to Governors, State and local educational agencies, and institutions of higher education. In addition, section 4135 of the Act authorizes the funding of five regional alochol and drug education and prevention centers. These centers will: (1) Train school teams to assess their alcohol and drug abuse problems and institutionalize long-term effective programs to address those problems; (2) provide assistance to State educational agencies in coordinating and strengthening alcohol and drug abuse prevention policies and programs; (3) provide assistance to local educational agencies and institutions of higher education in developing pre-service and in-service training programs for educational personnel; and (4) evaluate and disseminate information on effective alcohol and drug abuse prevention programs and strategies.

On March 18, 1987, the Secretary published a notice of proposed rulemaking for this program in the **Federal Register** (52 FR 8570). A summary of the major provisions was included in the NPRM. There are no significant differences between these final regulations and the NPRM. Minor technical changes have been made to simplify and clarify the language in the regulations.

Also, as indicated in the NPRM, the Regional Centers Program is subject to applicable law protecting students' rights in research, experimental programs, and testing. See section 439 of the General Education Provisions Act (20 U.S.C. 1232h) and its implementing regulations in 34 CFR Part 98.

Comments and Responses

Seven commenters submitted recommendations and comments. A summary of their comments and the Secretary's responses follows.

Comment: Four commenters pointed out that special education students are frequently overlooked in alcohol and drug education classes, yet are particularly susceptible to drug abuse due to a lack of information and related resources. The commenters suggested that funding be specifically designated so that each regional center would train school personnel to assess the need, develop training programs, and develop evaluation as well as prevention programs for special education students. Alternatively, the commenters suggested that a National Special Education Center be established for this purpose.

Response: No change has been made. The Secretary agrees that centers should address the needs of special education students for drug and alcohol abuse education and prevention activities. However, the Secretary believes that these needs can be addressed as a part of each center's general activities. Moreover, the Act authorizes five regional centers and does not authorize a national center solely for special populations.

Comment: One commenter recommended that the services of knowledgeable attorneys be utilized at both the regional center and school team level to assist with both the development and implementation of specific school alcohol and drug policies. The commenter further recommended that if the school teams were multi-disciplinary, the Department should require that at least one member be a practicing attorney familiar with the legal issues associated with alcohol and drug use. The commenter also suggested that information regarding legal issues be directly available to parents and students, as well as school teams.

Response: No change has been made. Section 235.4(a)(3) of the regulations requires each center to provide information and assistance related to "[l]aws governing the use of alcohol and drugs, as well as laws governing school discipline." Centers should utilize the services of attorneys as needed to satisfy this requirement.

School teams are groups of individuals who receive training from centers; these teams are not required to represent a variety of professions and disciplines. The Secretary believes that each school system participating in training should have flexibility in selecting the individuals included in its school team, and that it would be unduly prescriptive to require that each team include an attorney. The regulations, however, do not preclude attorneys from participating in team training. The Secretary also encourages teams to work with legal counsel at the local level in implementing school policies that result from team training.

Finally, centers are not required, through training, directly to provide information regarding legal issues to parents and students, in addition to school teams. Nevertheless, centers are required to train teams to "mobilize [their] communit[ies] to address [drug and alcohol abuse] problems." *See* § 235.3(a). Mobilization could include transmission of information learned through training. This transmission can be facilitated if teams include representatives of parents and students.

The Secretary also encourages teams, schools, and communities to refer to the pamphlet *School Without Drugs*, which the Department published last year. This pamphlet contains a section on "How the Law Can Help," which reviews legal issues related to implementing an effective school drug policy. The pamphlet also contains other useful information related to drug-free schools.

Comment: One commenter recommended that applicants be required actively to involve existing substance abuse programs in assessing regional needs. The commenter also suggested that the role of the States' drug, alcohol, and educational agencies in providing oversight and direction of the regional centers' activities be clearly and explicitly defined to ensure consistency with State substance abuse prevention efforts.

Response: No change has been made. The regulations already require adequate coordination between centers and existing efforts to combat drug and alcohol abuse. For example, each regional center must (1) establish an advisory structure that broadly represents its region and includes representatives of State educational agencies, local educational agencies, institutions of higher education, judicial and law enforcement agencies, and Governors of States within the region, and (2) coordinate the center's activities with local, State, national, and other regional efforts to combat alcohol and drug abuse. *See* §§ 235.40 (b) and (d) of the regulations. The regulations also include selection criteria focusing on both an applicant's proposed advisory structure and its coordination with existing State and regional substance abuse organizations in developing its application. *See* §§ 235.31 (c) and (d).

Comment: One commenter suggested that §§ 235.4(a) (2) and (3) of the regulations be rewritten to specify that each of the items listed in these sections must be separately addressed in training school teams.

Response: No change has been made. Sections 235.4(a) (2) and (3) clearly require that training address each of the listed items.

Comment: The same commenter suggested that the District of Columbia be included in both the northeast and southeast geographic regions, or, alternatively, that the District be established as a separate region to allow for national coordination of the activities of the other centers.

Response: No change has been made. To include the District of Columbia in two geographic regions would create administrative problems for the two regions which could result in a duplication of effort. The alternative suggestion that the District be treated as a separate region would unreasonably increase the workload of the four remaining centers authorized by the Act. The Department plans to coordinate the activities of all the regional centers to ensure a coherent national effort of drug abuse education and prevention.

Executive Order 12291

These regulations have been reviewed in accordance with Executive Order 12291. They are not classified as major because they do not meet the criteria for major regulations established in the order.

Intergovernmental Review

Beginning January 1, 1988, this program will be subject to the requirements of Executive Order 12372 and the regulations in 34 CFR Part 79. This marks a change from the NPRM, which would have made Part 79 applicable on the effective date of these final regulations. This change is needed to ensure the timely award of program funds later this calendar year.

Assessment of Educational Impact

In the notice of proposed rulemaking, the Secretary requested comments on whether the proposed regulations would require transmission of information that is being gathered by or is available from any other agency or authority of the United States.

Based on the response to the proposed rules and on its own review, the Department has determined that the regulations in this document do not require transmission of information that is being gathered by or is available from any other agency or authority of the United States.

List of Subjects in 34 CFR Part 235

Drug abuse, Education, Elementary and secondary education, Grant programs—education, Reporting and recordkeeping requirements.

(Catalog of Federal Domestic Assistance Number 84.188, Drug-Free Schools and Communities—Regional Centers Program)

Dated: June 23, 1987.

William J. Bennett,

Secretary of Education.

The Secretary amends Title 34 of the Code of Federal Regulations by adding new Part 235 to read as follows:

PART 235—DRUG-FREE SCHOOLS AND COMMUNITIES—REGIONAL CENTERS

Subpart A—General

Sec.
235.1 What is the Drug-Free Schools and Communities—Regional Centers Program?
235.2 Who is eligible for an award?
235.3 What responsibilities must a center carry out with its award?
235.4 What activities must a center conduct in training school teams?
235.5 What activities must a center conduct in assisting SEAs?
235.6 What activities must a center conduct in assisting LEAs and IHEs?
235.7 What activities must a center conduct in evaluating and disseminating information?
235.8 What geographic regions do the centers serve?
235.9 What regulations apply?
235.10 What definitions apply?

Subpart B—[Reserved]

Subpart C—How Does the Secretary Make an Award?

235.30 How does the Secretary evaluate an application?
235.31 What selection criteria does the Secretary use?

Subpart D—What Conditions Must Be Met After an Award?

235.40 What conditions must a center meet in coordinating services throughout its region?
235.41 What other conditions must a center meet?

Authority: 20 U.S.C. 4645, unless otherwise noted.

Subpart A—General

§ 235.1 What is the Drug-Free Schools and Communities—Regional Centers Program?

This program establishes and maintains five regional alcohol and drug abuse education and prevention centers. These centers train school teams, assist State and local educational agencies (SEAs and LEAs) and institutions of higher education (IHEs), and evaluate and disseminate information on effective programs and strategies to combat alcohol and drug abuse. The primary purpose of each center is to help schools and communities eliminate alcohol and drug abuse by young people. For example, centers help clients formulate and enforce school policies against illegal alcohol and drug use.

(Authority: 20 U.S.C. 4645)

§ 235.2 Who is eligible for an award?

The Secretary may make an award for a regional center to a public or private organization, institution, or agency, or to an individual.

§ 235.3 What responsibilities must a center carry out with its award?

Each regional center shall use funds awarded by the Secretary to carry out the following responsibilities:

(a) Train school teams to assess the scope and nature of their drug abuse and alcohol abuse problems, mobilize the community to address these problems, design appropriate curricula, identify students at highest risk and refer them to appropriate treatment, and institutionalize long term effective drug and alcohol abuse programs, including long range technical assistance, evaluation, and followup on that training;

(b) Assist SEAs in coordinating and strengthening drug abuse and alcohol abuse education and prevention programs;

(c) Assist LEAs and IHEs in developing appropriate pre-service and in-service training programs for educational personnel; and

(d) Evaluate and disseminate information on effective alcohol and drug abuse education and prevention programs and stategies.

(Authority: 20 U.S.C. 4645)

§ 235.4 What activities must a center conduct in training school teams?

(a) In training school teams under § 235.3(a), each center shall provide information and assistance related to—

(1) Developing and enforcing comprehensive school policies against illegal alcohol and drug use;

(2) The causes, symptoms, and effects of alcohol and drug abuse;

(3) Laws governing the use of alcohol and drugs, as well as laws governing school discipline;

(4) Alcohol and drug abuse prevention programs that have been effective in other school districts, including practical assistance in implementing those programs; and

(5) Collecting data that measure how effective each school-based program is in eliminating student alcohol and drug abuse.

(b) Each center shall offer training in locations and at times that are appropriate to the needs of its clients.

(Authority: 20 U.S.C. 4645)

§ 235.5 What activities must a center conduct is assisting SEAs?

In assisting SEAs under § 235.3(b), each center shall provide information and assistance related to—

(a) Developing and enforcing comprehensive school policies against illegal alcohol and drug use;

(b) Assessing the nature and scope of alcohol and drug abuse problems in the schools of the State; and

(d) Developing appropriate pre-service and in-service training programs for educational personnel.

(Authority: 20 U.S.C. 4645)

§ 235.6 What activities must a center conduct in assisting LEAs and IHEs?

In assisting LEAs and IHEs under § 235.3(c), each center shall provide practical assistance to, and promote cooperative efforts between, those agencies and institutions in—

(a) Developing and improving programs to train educational personnel in alcohol and drug abuse prevention; and

(b) Preparing educational personnel to train other educational personnel in alcohol and drug abuse prevention.

(Authority: 20 U.S.C. 4645)

§ 235.7 What activities must a center conduct in evaluating and disseminating information?

In evaluating and disseminating information under § 235.3(d), each center shall—

(a) Develop appropriate methods for evaluating the effectiveness of programs in preventing alcohol and drug abuse;

(b) Obtain, analyze, and disseminate, as appropriate, data from the center's clients as well as from other sources that can be used to measure the effectiveness of activities conducted by the center in eliminating alcohol and drug abuse; and

(c) Disseminate information to LEAs, SEAs, IHEs, and communities in the region on model programs and strategies to prevent alcohol and drug abuse.

(Authority: 20 U.S.C. 4645)

§ 235.8 What geographic regions do the centers serve?

The regional centers established under this program shall serve the following geographic regions:

(a) Northeast

Connecticut
Delaware
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Ohio
Pennsylvania
Rhode Island
Vermont

(b) Southeast

Alabama
District of Columbia
Florida
Georgia
Kentucky
North Carolina
Puerto Rico
South Carolina
Tennessee
Virginia
Virgin Islands
West Virginia

(c) Midwest

Indiana
Illinois
Iowa
Michigan
Minnesota
Missouri
Nebraska
North Dakota
South Dakota
Wisconsin

(d) Southwest

Arizona
Arkansas
Colorado
Kansas
Louisiana
Mississippi
New Mexico
Oklahoma
Texas
Utah

(e) West

Alaska
American Samoa
California
Guam
Hawaii
Idaho
Montana
Nevada
Northern Mariana Islands
Oregon
Trust Territory of the Pacific Islands
Washington
Wyoming

(Authority: 20 U.S.C. 4645)

§ 235.9 What regulations apply?

The following regulations apply to the Drug-Free Schools and Communities—Regional Centers Program:

(a) The Education Department General Administrative Regulations (EDGAR) in 34 CFR Part 74 (Administration of Grants), Part 75 (Direct Grant Programs), Part 77 (Definitions That Apply to Department Regulations), Part 78 (Education Appeal Board), and Part 79 (Intergovernmental Review of Department of Education Programs and Activities).

(b) The regulations in this Part 235.

(Authority: 20 U.S.C. 4645)

§ 235.10 What definitions apply?

(a) *Definitions in the Act.* The following terms used in this part are defined in section 4141 of the Act:

Drug abuse education and prevention
Illicit drug use
Institution of higher education

(b) *Definitions in EDGAR.* The following terms used in this part are defined in 34 CFR 77.1:

Application
Award
Department
EDGAR
Local educational agency
Private
Public
Secretary
State
State educational agency

(c) *Other definitions.* The following definition also applies to this part:

"Act" means the Drug-Free Schools and Communities Act of 1986.

(Authority: 20 U.S.C. 4645)

Subpart B—[Reserved]

Subpart C—How Does the Secretary Make an Award?

§ 235.30 How does the Secretary evaluate an application?

(a) To make awards, the Secretary conducts a separate competition for each of the geographic regions described in § 235.8. Within each region the Secretary evaluates an application on the basis of the criteria in § 235.31.

(b) The Secretary awards up to 100 points for these criteria.

(c) The maximum possible score for each criterion is indicated in parentheses.

(Authority: 20 U.S.C. 4645)

§ 235.31 What selection criteria does the Secretary use?

The Secretary uses the following criteria to evaluate an application:

(a) *Understanding of regional needs.* (10 points) The Secretary reviews each application to determine how adequately the applicant has assessed the alcohol and drug-related problems and needs in its region.

(b) *Plan to address regional needs.* (40 points) The Secretary reviews each application to determine the quality of the applicant's detailed plan to carry out the responsibilities and activities listed in §§ 235.3 through 235.7 of this part to address the problems and needs of its region.

(c) *Advisory structure.* (10 points) The Secretary reviews each application to determine—

(1) The breadth of representation on the applicant's proposed advisory structure;

(2) The extent to which representatives of appropriate groups have agreed to serve in an advisory capacity; and

(3) The adequacy of the applicant's plans to involve the advisory structure in the activities of the proposed center.

(d) *Coordination with other activities, balance of services.* (10 points) The Secretary reviews each application to determine—

(1) The degree to which the applicant has coordinated with State and regional organizations administering alcohol and drug abuse programs in developing the application;

(2) The adequacy of the applicant's plans for coordination with State, regional, and national alcohol and drug abuse prevention activities; and

(3) The adequacy of the applicant's plans to achieve balance in providing services throughout the region.

(e) *Management plan.* (15 points) The Secretary reviews each application to determine the quality of the plan of operation for the center, including—

(1) The extent to which the plan is effective and ensures proper and efficient administration of the center;

(2) The manner in which the plan provides for the applicant to use resources and personnel to achieve its objectives;

(3) The adequacy of the resources the applicant plans to use—including facilities, equipment, and supplies;

(4) How the plan will ensure that the center will select participants, who are otherwise eligible to participate, for activities of the center without regard to race, color, national origin, sex, age, or handicapping condition; and

(5) The schedules of work and completion dates for activities identified in the plan.

(f) *Quality of key personnel.* (10 points) (1) The Secretary reviews each application to determine the quality of key personnel proposed for the center, including—

(i) The qualifications of the center director;

(ii) The qualifications of each of the other key personnel;

(iii) The time that each person referred to in paragraphs (f)(1) (i) and (ii) of this section will commit to the center; and

(iv) How the center, as part of its nondiscriminatory employment practices, will ensure that its personnel are selected for employment without regard to race, color, sex, national origin, age, or handicapping condition.

(2) To determine personnel qualifications under paragraphs (f)(1) (i) and (ii) of this section, the Secretary considers—

(i) Experience and training in alcohol and drug abuse education and prevention; and

(ii) Any other qualifications that pertain to the quality of the center's program and services, including the capacity for training, evaluation, and dissemination.

(g) *Evaluation plan.* (5 points) The Secretary reviews each application to determine the quality of the applicant's plan to evaluate the effectiveness of the center, including the extent to which the methods of evaluation are appropriate, are objective, and produce data that are quantifiable.

(Authority: 20 U.S.C. 4645)

(Approved by the Office of Management and Budget under control number 1810–0529.)

Subpart D—What Conditions Must Be Met After an Award?

§ 235.40 What conditions must a center meet in coordinating services throughout its region?

In carrying out its general responsibilities under the Act, each center shall—

(a) Actively acquaint SEAs, LEAs, and IHEs with the range of services offered by the center;

(b) Establish an advisory structure that broadly represents the region and includes representatives of SEAs, LEAs, and IHEs, judicial and law enforcement agencies, and Governors of States within the region;

(c) Achieve balance throughout the region in the provision of the center's services;

(d) Coordinate the center's activities with local, State, national, and other regional efforts to combat alcohol and drug abuse; and

(e) Cooperate with the Department, its contractors, and other regional centers in efforts to eliminate alcohol and drug abuse throughout the Nation.

(Authority: 20 U.S.C. 4645)

§ 235.41 What other conditions must a center meet?

Each center must ensure that any materials produced or distributed with funds awarded to the center under the Act reflect the message that illicit drug use is wrong and harmful.

[Authority: 20 U.S.C. 4645]

[FR Doc. 87–16120 Filed 7–15–87; 8:45 am]

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federal register

Thursday
July 16, 1987

Part VI

Department of Transportation

Research and Special Programs Administration

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49 CFR Part 177
State Designations of Alternative Routes for Radioactive Materials Transportation; Proposed Rulemaking

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Part 177

[Docket No. HM-164A; Notice 87-8]

State Designations of Alternative Routes for Radioactive Materials Transportation

AGENCY: Office of Hazardous Materials Transportation, Research and Special Programs Administration, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice proposes to amend 49 CFR 177.825 to require that, when a State routing agency designates an alternative route for the transportation of highway route controlled quantity radioactive materials, the State must give written notice of such designation to the Research and Special Programs Administration (RSPA). The creation of a repository for these designations will provide shippers, carriers, enforcement and emergency response personnel, State agencies, local governments, and RSPA with definitive information concerning those alternative routes. RSPA also proposes to provide greater flexibility to States concerning the manner in which alternative routes are designated.

DATE: Comments must be received by August 31, 1987.

ADDRESS: Address comments to: Dockets Unit, Office of Hazardous Materials Transportation (DHM-30), U.S. Department of Transportation, Washington, DC 20590. Comments should be submitted, identifying the docket number (Docket HM-164A) and, when possible, in five copies. The Dockets Unit is located in Room 8426 of the Nassif Building, 400 Seventh Street, SW., Washington, DC. Office hours are 8:30 a.m. to 5:00 p.m., Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Edward H. Bonekemper III, Senior Attorney, Office of the Chief Counsel, Research and Special Programs Administration, 400 7th Street, SW., Washington, DC 20590 (202-366-4362).

SUPPLEMENTARY INFORMATION: On January 19, 1981, RSPA promulgated 49 CFR 177.825(b) as a final rule under Docket HM-164 (46 FR 5298) establishing routing and driver training requirements for highway carriers of any package of "large quantity radioactive materials." The regulated quantities later were changed (48 FR 10247, March 10, 1983) to any package of "highway route controlled quantity radioactive materials" as defined in 49 CFR 173.403(l).

Section 177.825(b) generally requires highway carriers of highway route controlled quantities of radioactive materials to utilize "preferred routes" selected to reduce time in transit. A preferred route is defined as:

> (i) An Interstate System highway for which an alternative route is not designated by State agency as provided in this section, and
>
> (ii) A State-designated route selected by a State routing agency (see § 171.8 of this subchapter) in accordance with the DOT "Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantity Shipments of Radioactive Materials".

That section also requires use of an Interstate System bypass or beltway around a city when available. Thus, the mandatory "preferred routes" for these radioactive materials shipments consist of Interstate System highways and State-designated alternative routes.

However, under the present system, it is difficult to determine which alternative routes have been designated by State routing agencies because there is no repository, let alone a single central repository, for those designations. Thus, shippers, carriers, enforcement and emergency response personnel, State agencies, local governments, and RSPA itself are unable to determine which alternative routes have been designated and which earlier designations remain in effect or have been changed.

RSPA's records and others' studies of radioactive materials transportation requirements indicate that approximately ten states have designated alternative routes as "preferred routes" under this regulation. The number of actual designations may be greater or less than ten, and there is no satisfactory means of determining how many of those designations currently are in effect.

This situation is not acceptable because shippers and carriers are not able to plan adequately for shipments of highway route controlled quantities of radioactive materials. For example, it is unrealistic to expect that a shipper or carrier planning for an eight-state radioactive materials shipment should have to locate and contact the appropriate official in each of those eight states to determine what designations, if any, exist. Not only do they have no definite means of determining which alternative routes may be available to them, but they are not able to determine which Interstate System highways they may not use because alternatives to them have been designated. The situation is further confused by the fact that some alternative routes are designated *in lieu of* Interstate System highways while others are designated *in addition to* Interstate System highways.

Similarly, Federal, state and local law enforcement and emergency response personnel are handicapped in their ability to enforce radioactive materials transportation requirements and to plan for adequate emergency response by the absence of a definitive source of information on State-designated alternative preferred routes.

To address this problem, RSPA is proposing to create a Registry of State-designated routes. Under this proposal, states planning to designate alternative routes would have to give written notice of such designations by certified mail, return receipt requested, as a prerequisite to those designations becoming effective. A designation would become effective when written notice thereof has been received and acknowledged on the return by RSPA's Dockets Unit. The written notice would specify whether the alternative route is in lieu of, or in addition to, one or more Interstate System highways. A designation acknowledged by RSPA would remain effective until RSPA receives and acknowledges receipt of written notice of a designation's revocation or of a change to it. RSPA's acknowledgement would simply indicate that the designation had been received and a copy placed in the Registry. The public would have access to the Registry in RSPA's Dockets Unit and would be able to request copies of State routing agency designations from RSPA.

As proposed, after the effective date of this rule, no State routing agency designation of an alternative preferred route under § 177.825(b) would be effective until the State's written notice thereof is received and acknowledged by RSPA's Dockets Unit. Thus, to make their designations effective, States would have to give notice of all existing designations and those being designated in the future. This would be necessary in order to provide the definitive information lacking in the present system. Under the proposed rule, therefore, no present or future designation would be effective without the required notice being given by the designating State to RSPA and being acknowledged by RSPA. RSPA contemplates establishing a delayed effective date to provide states with adequate time to file notices concerning existing designations.

RSPA is interested in improving its system to eliminate this deficiency and solicits comments which will assist in solving this problem effectively and efficiently. RSPA desires to minimize reporting burdens while providing a source of information which is vital to all parties involved with the transportation of radioactive materials.

In a related action designated to improve the designation process, RSPA proposes that States be given greater flexibility in the manner of selecting State-designated routes. Section 177.825(b)(1) presently requires that State-designated alternative routes be selected in accordance with the DOT "Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantity Shipments of Radioactive Materials." However, the definition of "state-designated route" in § 171.8 indicates that such a route may be selected in accordance with DOT Guidelines *or* "an equivalent routing analysis which adequately considers overall risk to the public."

RSPA proposes to eliminate this incongruity by modifying § 177.825(b)(1) to allow States to select alternative preferred routes in accordance with the DOT Guidelines or an equivalent routing analysis adequately considering overall risk to the public. RSPA acknowledges that its own Guidelines are not flawless and is willing to consider rational, sophisticated alternative risk analysis approaches to the issue of hazardous materials routing. The proposed change would synchronize §§ 177.825(b)(1) and 171.8 and provide States with greater, but controlled, flexibility in designating alternative routes for highway route controlled quantities of radioactive materials.

Administrative Notices

A. Executive Order 12291

RSPA has determined that the effect of this regulatory proposal would not meet the criteria specified in section 1(b) of Executive Order 12291 and, therefore, is not a major rule. This is not a significant rule under DOT regulatory procedures (44 FR 11034) and requires neither a Regulatory Impact Analysis nor an environmental impact statement under the National Environmental Policy Act (42 U.S.C. 4321 et seq.). A regulatory evaluation is available for review in the Docket.

B. Impact on Small Entities

I certify that the proposal in this notice will not, if promulgated, have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

C. Paperwork Reduction Act

Information collection requirements contained in this proposal are being submitted for approval to the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (Pub. L. 96-511).

List of Subjects in 49 CFR Part 177

Hazardous materials transportation, Radioactive materials, Alternative routes.

In consideration of the foregoing, 49 CFR Part 177 would be amended as follows:

PART 177—CARRIAGE BY PUBLIC HIGHWAY

1. The authority citation for Part 177 would be revised to read:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 49 CFR Part 1, unless otherwise noted.

2. In § 177.825, paragraph (b)(1) would be revised to read:

§ 177.825 Routing and training requirements for radioactive materials.

* * * * *

(b) * * *

(1) A preferred route consists of:

(i) An Interstate System highway for which an alternative route is not designated by a State routing agency as provided in this section; and

(ii) A State-designated route selected by a State routing agency (see § 171.8 of this subchapter), in accordance with the DOT "Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantity Shipments of Radioactive Materials," or an equivalent routing analysis which adequately considers overall risk to the public. For the designated route to be effective, written notice by certified mail, return receipt requested, must be given by the State to, and receipt be acknowledged by, Dockets Unit (DHM-30), Research and Special Programs Administration, U.S. Department of Transportation, Washington, DC 20590 (Attention: Registry of State-designated Routes, Docket HM-164A).

* * * * *

Issued in Washington, DC, on July 10, 1987, under authority delegated in 49 CFR Part 106, Appendix A.

Alan I. Roberts,

Director, Office of Hazardous Materials Transportation.

[FR Doc. 87-16182 Filed 7-15-87; 8:45 am]

BILLING CODE 4910-60-M

federal register

Thursday
July 16, 1987

Part VII

Department of Transportation

Research and Special Programs Administration

49 CFR Parts 173 and 177

Notification to RSPA of Route Plans for Radioactive Materials Transportation; Proposed Rulemaking

DEPARTMENT OF TRANSPORTATION

49 CFR Parts 173 and 177

[Docket No. HM-164B; Notice 87-9]

Notification to RSPA of Route Plans for Radioactive Materials Transportation

AGENCY: Office of Hazardous Materials Transportation, Research and Special Programs Administration, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice proposes to amend 49 CFR 173.22 and 177.825 to require that carriers, rather than shippers, give written notice to the Research and Special Programs Administration (RSPA) of route plans and other information relating to the transportation of highway route controlled quantities of radioactive materials.

DATE: Comments must be received by August 31, 1987.

ADDRESS: Address comments to: Dockets Unit, Office of Hazardous Materials Transportation (DHM-30), U.S. Department of Transportation, Washington, DC 20590. Comments should be submitted, identifying the docket number (Docket HM-164B) and, when possible, in five copies. The Dockets Unit is located in Room 8426 of the Nassif Building, 400 Seventh Street SW., Washington, DC. Office hours are 8:30 a.m. to 5:00 p.m., Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Edward H. Bonekemper, III, Senior Attorney, Office of the Chief Counsel, Research and Special Programs Administration, 400 7th Street, SW., Washington, DC 20590 (202-366-4362).

SUPPLEMENTARY INFORMATION: On January 19, 1981 (46 FR 5298), in Docket HM-164, RSPA promulgated 49 CFR 177.825(b) as a final rule establishing routing and driver training requirements for highway carriers of any package of "large quantity radioactive materials." The regulated quantities later were changed (49 FR 10247, March 10, 1983) to any package of "highway route controlled quantity radioactive materials" as defined in 49 CFR 173.403(1).

Section 177.825(c) requires the carrier (or his agent) operating a motor vehicle containing highway route controlled quantities of radioactive materials to prepare a written route plan and to provide copies to the motor vehicle driver and the shipper. The route plan must contain origin and destination points, the selected route, planned stops, estimated departure and arrival times, and emergency assistance telephone numbers. Finally, the rule requires variations between the route plan and routes actually used, and the reasons therefor, to be reported in an amendment to the route plan, which must be delivered to the shipper as soon as practicable but within 30 days of the deviation.

Under Docket HM-164, RSPA imposed certain filing requirements on shippers of highway route controlled quantities of radioactive materials. Section 173.22(d) requires them, within 90 days of carriers' accepting a package of such materials, to file with the Director, Office of Hazardous Materials Transportation, RSPA: (1) The route plan described above, including supplements within 90 days of receipt; (2) a statement of the names and addresses of the shipper, carrier and consignee, and (3) a copy of the shipping paper or description of the radioactive material required by § 172.202 and § 172.203.

Several problems have occurred as shippers attempt to comply with these regulations. Submissions of route plans, and particularly of route plan amendments, have been late and inaccurate. Part of the problem seems to be the awkward information flow required by the regulations. The carrier develops the route plan and subsequent amendments thereto and submits copies of these to the shipper. The shipper, without knowing whether these documents are correct, is then required to provide copies of them to RSPA. RSPA considers that the timeliness and accuracy of these submissions would be improved by requiring their preparer, the carrier, to submit them directly to RSPA. Thus, RSPA proposes to amend Part 177 to place this responsibility on carriers instead of shippers.

Shippers also have two related but less burdensome information requirements under § 173.22(d). That section requires shippers to provide RSPA with (1) a statement of the names and addresses of the shipper, carrier and consignee and (2) a copy of the shipping paper or description of the radioactive material required by §§ 172.202 and 172.203.

This information is available to both carriers and shippers. It appears more efficient to place these information-providing responsibilities on a single party than to place them on two parties. It also appears more effective and efficient to receive the route plans from carriers rather than shippers. Therefore, RSPA is proposing to require carriers to provide to RSPA all three types of information currently required from shippers under § 173.22(d).

RSPA solicits comments which will enable it to determine the most equitable and efficient means of allocating responsibility for providing all these types of information.

Administrative Notices

A. Executive Order 12291

RSPA has determined that the effect of this regulatory proposal would not meet the criteria specified in section 1(b) of Executive Order 12291 and, therefore, that it is not a major rule. This is not a significant rule under DOT regulatory procedures (44 FR 11034) and requires neither a Regulatory Impact Analysis nor an environmental impact statement under the National Environmental Policy Act (42 U.S.C. 4321 *et seq*). A regulatory evaluation is available for review in the Docket.

B. Impact on Small Entities

I certify that the proposal in this notice will not, if promulgated, have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

C. Paperwork Reduction Act

Information collection requirements contained in this proposal are being submitted for approval to the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (Pub. L. 96-511).

List of Subjects

49 CFR Part 173

Hazardous materials transportation, shippers' responsibility.

49 CFR Part 177

Hazardous materials transportation, Radioactive materials, Shippers, Carriers.

In consideration of the foregoing, 49 CFR Parts 173 and 177 would be amended as follows:

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

1. The authority citation for Part 173 would be revised to read:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 49 CFR Part 1, unless otherwise noted.

§ 173.22 [Amended]

2. § 173.22, paragraph (d) would be removed.

PART 177—CARRIAGE BY PUBLIC HIGHWAY

1. The authority citation for Part 177 would be revised to read:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 49 CFR Part 1, unless otherwise noted.

In § 177.825, a new paragraph (f) would be added to read as follows:

§ 177.825 Routing and training requirements for radioactive materials.

* * * * *

(f) Except for shipments in compliance with physical security requirements of the U.S. Nuclear Regulatory Commission in 10 CFR Part 73, each carrier shall, within 90 days following acceptance by a carrier of each shipment containing a highway route controlled quantity of radioactive material (see § 173.401(l)), file the following information with the Director, Office of Hazardous Materials Transportation, RSPA:

(1) The route plan required under § 177.825(c) of this subchapter. Any supplement to the route plan prepared in accordance with § 177.825(c) of this subchapter shall be filed within 30 days of its delivery to the shipper;

(2) A statement identifying the names and addresses of the shipper, carrier and consignee; and

(3) A copy of the shipping paper or the description of the radioactive material in the shipment required by §§ 172.202 and 172.203 of this subchapter.

Issued in Washington, DC, on July 10, 1987, under authority delegated in 49 CFR Part 106, Appendix A.

Alan I. Roberts,

Director, Office of Hazardous Materials Transportation.

[FR Doc. 87-16183 Filed 7-15-87; 8:45 am]

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Federal Register
Vol. 52, No. 136
Thursday, July 16, 1987

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United States Government Manual	**523-5230**

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Library	**523-5240**
Privacy Act Compilation	**523-4534**
TDD for the deaf	**523-5229**

FEDERAL REGISTER PAGES AND DATES, JULY

24443-24970	1
24971-25192	2
25193-25344	6
25345-25578	7
25579-25860	8
25861-25962	9
25963-26126	10
26127-26292	13
26293-26468	14
26469-26662	15
26663-26934	16

CFR PARTS AFFECTED DURING JULY

At the end of each month, the Office of the Federal Register publishes separately a List of CFR Sections Affected (LSA), which lists parts and sections affected by documents published since the revision date of each title.

3 CFR

Proclamations:	
5674	25345
5675	25347
5676	25963
Administrative Orders	
Memorandums:	
June 30, 1987	24971
Proposed Rules:	
102	25124

5 CFR

213	25193
315	25193
841	25195
842	25197
870	25197
890	25197
1620	26293
2411	26127
Proposed Rules:	
723	25124
1207	25124
1262	25124
2416	25124

7 CFR

29	25199
246	25182
250	24973
252	24973
301	25579
330	25861
340	25861
400	24978
418	25585
419	25585
427	25585
429	25585
453	25349
713	25353
795	26294
910	25200, 25965
925	24443
929	25201
967	25202
985	25202
1065	25203
1011	26469
1427	25354
1807	26130
1863	26130
1864	26130
1866	26130
1900	26130
1910	25585
1924	26130, 26139
1941	26130
1950	26130
1951	26130
1955	26130
1956	26130
1965	26130
1980	25586
Proposed Rules:	
29	25235
418	25381
419	25382
427	25383
429	25384
439	25015
945	25016
987	26688
989	26689
1065	26016
1076	25020

8 CFR

3	24980
242	26470
244	24982
292	24980
Proposed Rules:	
103	24475

9 CFR

114	26140
Proposed Rules:	
92	25606
94	25020
317	24475
381	24475

10 CFR

4	25355

12 CFR

571	26295
Proposed Rules:	
211	26153
225	26153
262	26153
350	25021
501	25870
543	25870
544	25870
545	25870
546	25870
551	25870
564	26017

13 CFR

Proposed Rules:	
144	26019

14 CFR

39	24982, 24984, 25204, 25206, 25361, 25589, 25591, 25965, 26296, 26471, 26472, 26663-26665
71	26141
97	24985
Proposed Rules:	
Ch. I	25886, 26020

39....25022-25028, 25236-25239, 25606, 26021, 26022, 26348, 26349, 26484
71....25029, 25240, 26023, 26153, 26350, 26351, 26485-26497
75....25241-25244, 25607, 25610
217....26498
241....26498
1245....24477
1251....25124

15 CFR

399....25207
960....25966

16 CFR

Proposed Rules:
13....26534

17 CFR

9....25362
201....25208
Proposed Rules:
200....25124
240....25245

18 CFR

11....25208
35....24987
272....26473
273....26473
389....24987
1310....25592
Proposed Rules:
4....25246
12....25246
154....25530
157....25530
260....25530
284....25530

19 CFR

4....26141
6....26141
10....24444, 26141
18....26141
19....26141
24....26297
54....26141
123....26141
141....24444, 26141
143....26141
144....26141
145....26141
148....24444
152....24444
177....24444
Proposed Rules:
7....26154
353....25246
354....25246
355....25246

20 CFR

404....26142
Proposed Rules:
626....26121
627....26121
628....26121
629....26121
630....26121
631....26121
725....26352

21 CFR

74....24583
81....24383, 25209
177....26666
178....26146, 26764
182....25209
184....25209, 25974
510....25211, 25976
520....25211
522....24994, 25212
556....24994, 25212
558....24995, 25212, 26299, 26401
1316....24446
Proposed Rules:
102....26690
103....26764
165....26764
181....26764
436....25252
452....25252

22 CFR

503....26024
Proposed Rules:
502....25384, 26156
512....25030
711....25124
1510....25124

24 CFR

511....25593
888....24446

26 CFR

1....24583, 24996, 26667
601....26667
602....24996, 26667
Proposed Rules:
1....25036, 26122
602....25036

28 CFR

0....24447
8....24448
11....24448
42....24449
Proposed Rules:
16....24583

29 CFR

103....25213
516....24894, 26121
2644....25007
2676....26475
Proposed Rules:
100....25124
103....25142
1910....26776
1926....26776

30 CFR

57....24924
218....24450
917....26299
938....26300
Proposed Rules:
57....26352
202....25887
203....25887
206....25887
212....25887
218....25887
914....25887
915....25888
917....26158, 26159
935....25386, 25387
938....25037

31 CFR

1....26302
545....25576

32 CFR

43....25008
63....25216
286....25976
292a....25216
552....25861
750....25595
751....25595
757....25595
1602....24453
1605....24453
1609....24453
1618....24453
1621....24453
1624....24453
1630....24453
1633....24453
1636....24453
1639....24453
1642....24453
1648....24453
1651....24453
1653....24453
1657....24453
1698....24453
Proposed Rules:
276....26692
277....26693

33 CFR

3....25216
25....25216
47....25216
72....25216
80....25216
100....25216, 26673, 26675
110....25864, 26146
117....25372-25374, 26341, 26676
165....25216, 25375, 26147, 26675
174....25216
Proposed Rules:
117....25389, 25391
140....25392
143....25392
165....26703
166....25039

34 CFR

11....25152
32....24956
206....24918
230....26918
235....26922
237....26466
270....24962
271....24962
272....24962
319....25830
320....26656

35 CFR

257....26001

36 CFR

800....25376
902....26677
Proposed Rules:
1150....26534
1208....25124

38 CFR

36....26342
Proposed Rules:
8a....26356
15....25124
17....25254
21....25736, 26026

40 CFR

50....24634, 26401
51....24672
52....24672, 26010, 26148, 26401
53....24724
58....24736
141....25690
142....25690
146....26342
180....25602
228....25008
260....25760
261....25760, 26012
262....25760
264....25760, 25942
265....25760
268....25760
270....25760, 25942
271....25760, 26013, 26476
272....26013
421....25552
795....24460
796....26150
797....26150
798....26150
799....24460, 25219, 26477
Proposed Rules:
22....25255
50....24670, 24716
51....26404
52....24716, 25256, 26404, 26413, 26419, 26421, 26424, 26427, 26428, 26431, 26435, 26439, 26534
60....25399
81....26410
141....25720
180....26536
260....25612, 26537
261....25612, 26537
264....25612, 26537
265....25612, 26537
266....25612, 26537
270....25612, 26537
271....25612, 26537
305....26160
306....26160
370....26357
372....25040
761....25838
763....25041

41 CFR

101-5....26150
101-40....26151
101-43....26152

42 CFR

57....26122
413....26152
Proposed Rules:
405....24752

412........25613
442........24482

43 CFR

4........26344
2800........25802, 25811
3430........25794
Proposed Rules:
3480........25887

44 CFR

64........26679
Proposed Rules:
16........25124
61........24466
361........25357

45 CFR

Ch. II........25603
Ch. III........25603
Ch. IV........25603
Ch. X........25603
689........24470-24472
Proposed Rules:
73........25408

46 CFR

550........26477
Proposed Rules:
2........25409
27........25890
31........25409
34........25409
58........25409
71........25409
76........25409
91........25409
95........25409, 26121
107........25409
108........25409
109........25409
146........25409
147........25409
167........25409
176........25409
181........25409
189........25409
193........25409
586........26027
588........26537

47 CFR

1........25865, 26681
61........26681
69........26681
73........24484, 25226-25228, 25603, 25865-25868, 26683
74........25603, 25865
76........25865
78........25865
Proposed Rules:
1........25261
2........25613
15........25613
22........26704
25........26538
43........26704
67........25263
73........24473, 25264, 25892, 25893, 26162, 26358-26360, 26539, 26540
76........26162
87........26360
90........25265

48 CFR

215........26345
235........24485
252........26345
Proposed Rules:
15........26446
52........26446
204........24485
205........24485
206........24485
215........26363
219........24485
245........25614
252........24485
253........25614
1804........25417
1805........26705
1812........25417
1815........26705
1832........25417
1842........25417
1845........26541
1847........25417
1852........25417, 26541
1870........26705

49 CFR

171........24473
173........25340
1130........26479
1313........25228
Proposed Rules:
173........25342, 26932
177........26928, 26932
178........26027
390........26278
391........26278
392........26278
393........26278
394........26278
395........26278, 26289
396........26278
397........26278

50 CFR

17........25229, 25376, 25522
215........26479
285........25011
603........26685
605........26685
642........25012
652........25014
661........25605, 26013
674........26014, 26482
675........25232
Proposed Rules:
13........26030
17........24485, 25265-25275, 25523, 26030-26040, 26164
21........26030
20........25170, 25419
23........26043, 26049
80........26660
226........26541
650........25041
652........25042
658........26051

LIST OF PUBLIC LAWS

Note: No public bills which have become law were received by the Office of the Federal Register for inclusion in today's List of Public Laws.

Last List July 15, 1987

Herbert Hoover

Harry Truman

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